NATURE MAGAZINE

JUNE 1931 35¢ VOL. 17, NO. 6

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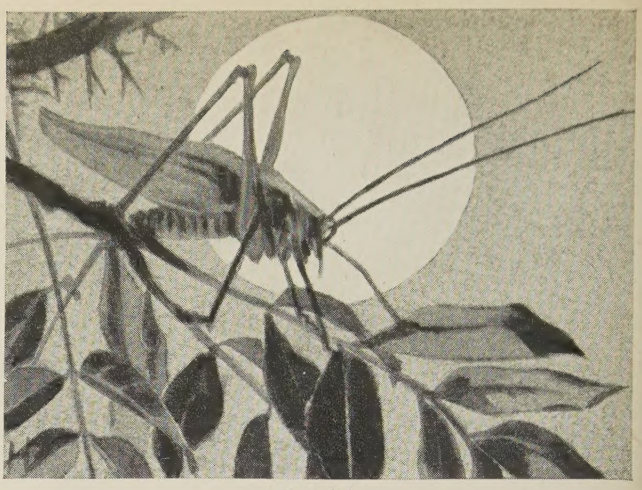

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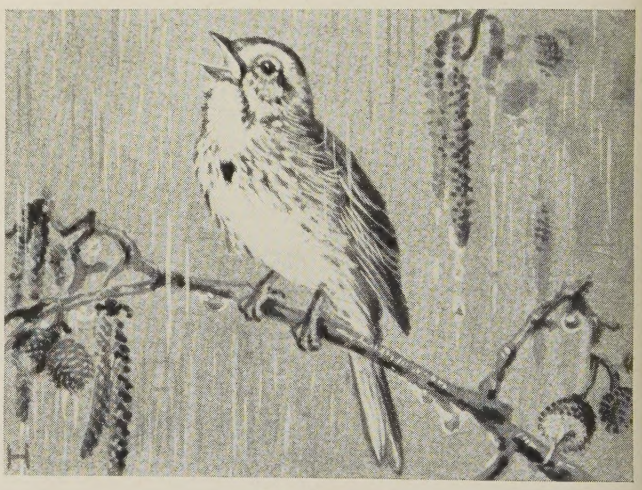

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Edited By
ELEANOR WALKER

English Roads

You really should do England just as you would take a sunbath—lazily. Discard all time-tables and tourists' schedules and ally yourself irrevocably to the method of "sauntering". By boat, by automobile, or by "bike", if you have a lot of vigor—the conveyance doesn't matter. The mood is the thing. Here is one place where we can all wander around the country-side without the handicap of a foreign language. Sometimes a half hour's conversation at the crossroads is worth ten looks at an abbey.

Some countries draw us by their grandeur,—Switzerland, western Canada, and the deserts of the Southwest. England is quaint; England is mellow; England is home—but England is not "grand".

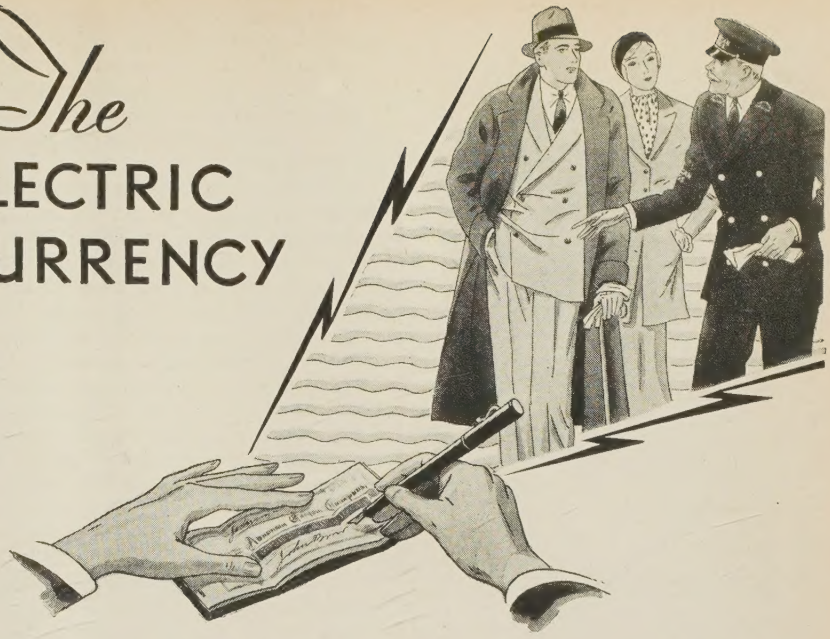
It is useless to lay out a tour for a tramp, and since we hope that you will be more or less "on the road" when you visit England, we'll merely mention helter-skelter a few of the less-travelled spots where you may find joy.

Cornwall—the name to most of us suggests chords of music—slow, majestic and suggestive of the legends of King Arthur. In spite of the sparring of scholarly lances over Tintagel, we shall mount that desolate cliff, and from the very ruins of King Arthur's castle listen to the lovely sea.

But there's a Cornwall unsung in epics that you will love more. A seaside road leads along the cliffs, up and down under a green arch of trees. You hear the waves booming on the rocks, and you see the gulls circling in great arcs. Up the hillside, with all the surefootedness of children, clamber a score of tiny whitewashed cottages. The windows peep out from thatched roofs like sleepy eyes from under bushy brows. Roses grow over the garden walls, foxgloves and geraniums thrive in the garden, and bees hum monotonously over all. There is no inn, no post-office, no shops; the gentle cottagers live their life by the sea year in and year out without contact with the outside world—except by radio. The stories you hear of an evening, if you linger here a bit, tell of men working the same fields for forty years, and of their wives raising both their children and their Canterbury bells without turbulence or furor.

One of the delightful things about travelling in England is that eccentric things are always happening to the wayfarer. We were, for once, taking a train from Exeter to Salisbury. It was a gray, dank day, and we were shivering. My friend entered the compartment, but just before time for the train to leave, I had a longing for a hot cup of tea. I rushed up to the platform cart, the uniformed lady poured me the tea, and as I took one sip, the train gave a lurch forward. I planked down the tea and bolted for the compartment, terribly embarrassed

The ELECTRIC CURRENCY OF MODERN TRAVEL



Edison made electricity the servant of the home. Bell made possible the sending of the human voice around the world. Marconi bound together the nations of the earth with wireless. The American Express Service transformed the traveler's hazardous bill-fold to a pocket vault and pass-book to service.

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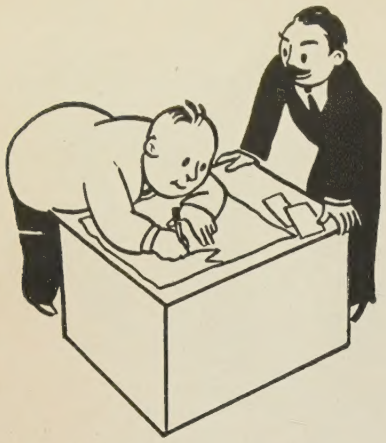

When a hotel manager *made a road map*

THIS guest was leaving early in the morning for the South. And he didn't know the road. During the evening, the manager himself made a road map for the guest. Did the guest appreciate it? He wrote back and said he never made a wrong turn.

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at not having paid for it. As the train passed, I tried to catch the tea lady's eye so as to explain my predicament by pantomime, but just as we came abreast the cart, I saw her, with great equanimity, hand out to a gentleman my tasted cup of tea. How we did laugh.

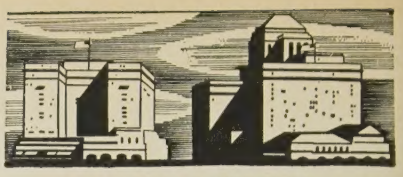
A bit later we sat toasting our toes before the hooded fireplace in the lounge of the Old George Hotel in Salisbury. Never did we have more delicious tea with thin slices of buttered bread and tiny cakes, all charmingly served by a scholarly-looking butler who combined the dignity of a clergyman with the graciousness of a courtier. The English tea hours give one a more satisfying sense of leisure than any other time in the day. As you relax before the fire gazing up at the dingy beamed ceilings, the old chairs and books, the ancient tapestries on the wall, you have a feeling of being at the root of things such as you never experience in your own country. In this particular inn Samuel Pepys and William Shakespeare are supposed to have slept.

Salisbury is, of course, on the tourist route, but since no cathedral in England has a more perfect setting nor a more beautiful spire, you should include it. The church stands in an acreage of green meadow, and whether you view it from nearby or from afar the effect is beautiful.

Space will not suffice to tell of the lovely hills of Somerset, the organ of Hereford cathedral, the charm of the medieval streets of Bristol, the arcades of Chester—but may we say that for two or three months of unhurried pleasure there's no place better than England.

Samoyede Praised

Use of the Samoyede, Russian wolf-killer and reindeer herder, for sled-work in the North and for herding purposes in the Arctic is strongly advocated by J. Stuart Thomson, explorer and writer. Mr. Thomson owns Pamelus, grandson of the famous Polaris, who took Peary to the Pole, and who is part Samoyede, and also possesses a daughter of the champion Mushinsk, one of the most beautiful of the breed raised in America. The daughter has just been named Pavlova by the American Kennel Club. These dogs are clever, faithful, strong and hard-working, and besides being able sled-animals, are as good as collies as herders and make ideal show dogs. Mr. Thomson suggests the use of these dogs to help carry out Peary's last unfulfilled request—the provisioning of the Smith Sound and Greenland Eskimos, who are the last remnant of civilization in the Arctic. Reindeer herds could be cared for by these dogs more successfully than by any other breeds.



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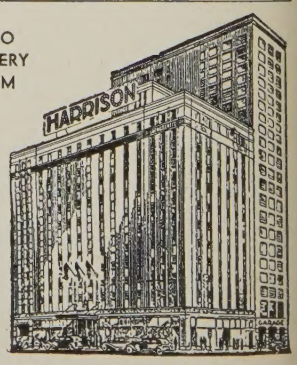

Experimental Forest Created

The first United States experimental forest to be established under the new regulation by which the Forest Service is to designate primitive, natural and experimental areas that are representative of the various forest regions of the United States, has been named the Gale River Experimental Forest and is located a few miles west of Mt. Washington, the highest peak of New England, in the heart of the White Mountains of New Hampshire. It includes approximately 1320 acres, mainly of spruce and hardwood, and is conveniently located for study of the pulpwood forest problems of New England.

Bear River Refuge

The Bear River Migratory Bird Refuge in Utah has grown to 52,386 acres, according to the Biological Survey, and cost $24,854.69 during 1930 for purchases and expenses. There still remains 22,570 acres to be taken under contract in the Upper Mississippi Wild Life and Fish Refuge, the Survey reports. Lands to be acquired for the Cheyenne Bottoms Migratory Bird Refuge, near Great Bend, Kansas, are being investigated and surveyed by field crews who will report in the fall.

State Parks Convention

The National Conference on State Parks will hold their eleventh annual meeting at St. Louis May 27 to May 31, and discussion of state park standards, methods of financing, education, highways, publications and equipment will take place. Howard B. Bloomer of Detroit, former chairman of the Michigan Conservation Commission, was recently elected president of the Conference.

A Strange Friendship

A domestic rabbit, which has a close and inseparable friendship with a deer herd, lives in Grand Canyon National Park, according to Ranger Burt Luzon, writing in Grand Canyon *Nature Notes*. The ranger discovered him one November day sitting on the back of a deer who had bedded down with two others under a pinyon tree. When the deer saw Luzon, they jumped up and started away at a gallop. The rabbit tried to stick on, but, being a poor rider, had to take to the ground, and when the deer disappeared in the thicket, he was left a bound behind. This same rabbit, which was released by a local youth, has been on friendly terms with the deer herd for more than a year, the ranger reports.

Any Back Numbers

According to the Post Office records, Mr. . M. Schnabel is Carrier No. 30 in Akron, Ohio. According to a lot of Boy Scouts, he a great fellow, their guide in Nature ork and a constant inspiration. Mr. chnabel sends in an appeal to us. He has very copy of Nature Magazine except numers one, two, three and six of Volume 1. e uses them in his Scout work. We would ke to be able to fill out his collection but e haven't them ourselves, not even in ound volume form. Perhaps some readers uld help out Mr. Schnabel. He would apreciate it, and so would the Scouts.

Mt. Cannon at the Head of Lake McDonald

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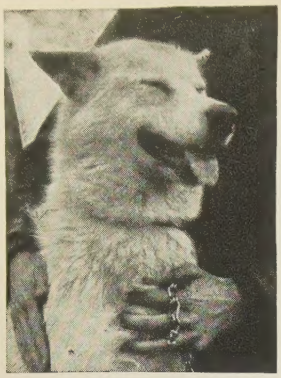

One of the lead dogs from the North Shore used on the Byrd Antarctic Expedition.

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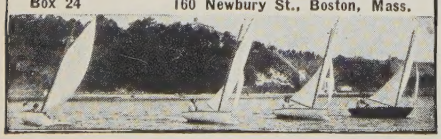

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High Sierra

The High Sierra of Yosemite National Park, to be visited this summer by Nature Magazine parties, form the subject for the fine series of Picture-Letters issued by Friends of the Western Mountains, through C. Edward Graves, the secretary. This series is based on the experiences of Mr. Graves on a nine-day trip last summer through the region. His twenty letters and accompanying photographs are glowing witnesses to the beauties of Yosemite's mountains and are valuable contributions to the literature on this region. They are issued once a week to members of Friends of the Western Mountains, which is an informal organization of those interested in the magnificent peaks along the Pacific. As others of the series, they consist of a typewritten letter of about 500 words and an original photograph suitable for framing or placing in an album. The Friends invite others to join their group, and with increased funds, plan further expansion. Membership is $2 a year. A library of western mountain literature is in the making, a series of lectures (synchronized with music) are being created, and an information bureau has been started. Mr. Graves may be reached at Arcata, California.

"Sore As a Bear"

Plenary evidence that bears have little, if any, sense of humor is forthcoming from Yellowstone National Park, where, some time ago, two bears, a lady sagebrusher, a can of hot tomato soup and a tent mixed themselves into a large slice of excellent drama. The sagebrusher, i.e., one who visits the park by automobile, was cooking in a little tent on the public camp ground when a large black bear entered. Of course, he had to stick his nose into a can of hot tomato soup that was resting on a small stove. With a roar of pain, he dove headfirst through the rear of the tent, knocking down the main tent pole and wrapping the lady sagebrusher in canvas from which she emerged some time later. The first thing the bear spied after his exit was a funny little yearling black bear who seemed to be amused at the performance. Bear No. 1 made for Bear No. 2, who turned tail and dashed for the nearest tree. Bear No. 1 also reached the tree and started climbing after his victim. Up they went until the youngster reached the tiptop branch and refused to go farther. Bear No. 1, who had let a roar out of him every time he made a jump up the tree, tried vigorously to shake him out, but without success; finally, he came down and wandered off, but it is historic fact that every bear he saw for some time thereafter was chased up a tree and subjected to the tree-shaking process. The comedy is reported in full in Yellowstone *Nature Notes* by Ted Ogston, Assistant Chief Ranger.

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Obstinacy or Fear?

A most interesting observation of goat character was recently made by District Ranger Carl Tice of Mt. Rainier National Park, when he watched the tactics of eight adults trying to get three young kids to make a particularly hazardous climb on the slopes of Mount Wow. The leader of the band, according to Preston P. Macy, writing in Mt. Rainier *Nature Notes*, had learned, either by "trial and error" or by instinct, that only one method of ascent would succeed. He walked up to the very steep incline, stopped and stood as if thinking what he should do next. Then he backed up a few steps, made a rush up the ledge and succeeded in reaching the top.

The kids were next in line but seemed reluctant to make the attempt. Three adults then came up and nosed the kids around gently, but still they refused to go up. Then, apparently to instill confidence in the young ones, these three went ahead. Each backed up a short distance, took a running start, gained the top and turned to peer back down the incline. This demonstration failed to overcome the fear or obstinacy which held the kids back. Two remaining adults then went on up to the hesitating kids and began butting them, not too gently, but they had their own ideas and would not be forced. They only crouched close to the ground and edged back down. The two adults then went disgustedly by and, following the established custom, made the top.

Only two adults now remained below. One went by the kids and made no effort to persuade them. The rear guard, an old veteran of the hills, came up and began butting the kids about with a determination to get them all up ahead of him. They only crouched more closely to the ground and backed away. Finally, by dint of persuasion, two of the kids advanced to the starting place, backed up and rushed on up to the top. This left one kid still hanging back because of fear or the traditional goat nature. Old Billy had now reached the limit of his patience; so he butted it, pushed it and even got his horns under and lifted it clear of the ground. The kid only held his own and flattened himself on the ground. Billy, feeling that his duty as rear guard had been performed faithfully, now gave up, went on up to the top, and with the rest of the band passed from view.

The remaining kid, seeing he had been left alone and probably feeling somewhat disgraced, now pulled himself together. He walked up to the take-off, followed the example of those gone ahead and reached the top in a hurry, to disappear in pursuit of the rest of the band.

Virginia Birdmen Meet

Dr. Ruskin S. Freer of Lynchburg, Virginia, was re-elected president of the Virginia Ornithological Society at the first annual meeting of the bird group held in Richmond in February. Other officers are: Charles O. Handley, vice-president; Miss Florence Hague, secretary; Ralph M. Brown, treasurer, and A. E. English, members of the executive committee. Dr. J. J. Murray is to continue as editor of *The Raven*, the organ of the group.

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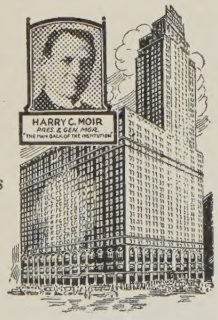

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A Yearly Guest

Last year a mockingbird came to the home of Miss Elsie Matthews of Ridgely, Maryland, and tried to peck berries from a Christmas wreath still hanging in the window. Since it evidently was in distress, the wreath was placed on the ground, and after all the berries were gone, other fruits were put out, first on the ground, then on the bird bath, and finally on a feeding stand fastened outside the dining room window. If the mocker found the feeding place empty, it would fly to a low corner of the kitchen roof and wait until some raisins, its favorite food, were put out. All last year it boarded with the family until insects became plentiful in the spring, when it disappeared. This year, on Lincoln's Birthday, again a mocker came to the window, then perched on the same corner of the kitchen roof. As soon as raisins were put out, it came for them without a moment's hesitation. Of late, raisins have been put inside the sill, and still it is unafraid. Clearly, the boarder of 1930 had decided to try another winter at the same establishment.

Nature Films Offered

With increasing emphasis on visual education, teachers are turning to moving pictures, especially in certain types of Nature teaching, where the camera can point out much more than numerous field trips. The Eastman Teaching Films, Inc., has issued a number of excellent Nature reels, and distributes with each set a teachers' guide which will be effective in making the most of the pictures. Among the most interesting units are: "Life History of the Mosquito," "Termites," "The Arid Southwest," "Baby Beavers," "Rocky Mountain Mammals," "Birds of Prey," "Game Birds," "Wading Birds," and "Birds of the Seacoast." These films are distributed from Rochester, New York.

Eluding the Hawk

The race between a hawk and pigeon in which the victim eluded its foe, reported on page 205 of March Nature Magazine, has recalled to J. E. Andrews, of Doylestown, Pennsylvania, a similar chase in which a meadow lark was the pursued. Mr. Andrews witnessed this race for life more than 50 years ago, in Kinsman, Ohio, on a warm spring day. A hawk was in full wing after a meadow lark, and just as he was about to seize it, the lark dodged, and the hawk went over his head, turned and took up the chase once more. Three times was this manoeuvre repeated, after which the hawk gave up and flew away.

Elephant Ear Leaves

Another enthusiastic grower of elephant ear leaves has appeared in the person of Mrs. Floyd B. Smith of Lockport, New York. She writes that formerly, when living in South Carolina, she used to attempt to grow larger and larger leaves, but, unfortunately, has lost the measurements of her best achievements in this line. In the lowlands of the Palmetto State, she writes, leaves of size greater than could be grown inland were grown.

WESTERN TRAILS

VOLUME 1 | JUNE, 1931 | NUMBER 4

"Western Trails" is the Alumni Bulletin of the Vagabonds of the Trail, the folks who have followed the trails with the American Nature Association. It is dedicated both to those who have graduated from these fine summer experiences, and to those who have indicated an interest in the trips but who have not yet graduated from a trail trip

PERSONALS

Walter S. (Unka Walt) Little, asper '30, sank many long putts n Florida this winter.

* * *

Pioneer enrollers among the agabonds this year were Miss orothy Caldwell and Miss Ethel .. West, respectively of Mt. acGregor and Glens Falls, New ork. They are going with the anff - Lake Louise - and - Glacier arty.

* * *

Helen Dolman, Glacier '29, is oing to Cornell Summer School garner her Ph.D.

* * *

Myra Hunter, Glacier '29, has eturned to teaching in Brooklyn.

* * *

Several members of the 1929 nd 1930 parties are planning to in 1931 groups. This makes em sophomores or juniors.

* * *

Members of the 1930 Yellowone party will be interested to ar that Old Scarface, Yellowone grizzly, has been deposed a younger bear.

* * *

E. T. Scoyen has taken over the ins as Superintendent of Glaer National Park. Ross Eakin, own to members of the Glacier agabonds, has the enviable task developing Shenandoah Naonal Park.

* * *

Edith Lathrop, Glacier '29, rently had an article in the Jourl of the National Education ssociation.

* * *

Art Pack is still maturing plans the *Westward* trip to Alaska s summer. There is a possiity that one or two might be le to join this party.

* * *

Kingsland Camp, Glacier-Jasr '30, yearns already for the ils of Glacier. He may make an cended trip there this summer.

* * *

The Editor of the Personals umn would like some more rsonals. Please write him and him what you are doing. Advt.

RIDSDALE-MCCALL

Mr. and Mrs. Donald Fenton Call (Betty Ridsdale, Glacier Glacier-Jasper '30) are now home in the New York 90's r a honeymoon in Bermuda. wedding took place March 5 Washington. Patsy Ridsdale, er '29, Glacier-Jasper '30, a charming bridesmaid.

VAGABONDS ELIGIBLE AS MEMBERS OF TRAIL RIDERS

Miles in the Saddle in Canadian Rockies Qualification

Members of the American Nature Association Vagabond trips in the past, or those who have covered a certain mileage atop a horse in the Canadian Rockies, are eligible for membership in the Trail Riders of the Canadian Rockies. That is, they are if they have rocked in a western saddle over at least fifty miles of trail in the Canadian Rockies. The aims of the Trail Riders are close to the hearts of all Nature lovers since they include:

"To encourage travel on horseback through the Canadian Rockies; to foster the maintenance and improvement of old trails and the building of new trails; to advocate and practise consideration for horses, and to promote the breeding of saddle horses suitable for high altitudes; to foster goodfellowship among those who visit and live in these glorious mountains; to encourage the love of outdoor life, the study and conservation of birds, wild animals and alpine flowers; to protect the forests against fire; to assist in every way possible to ensure the complete preservation of the National Parks of Canada for the use and enjoyment of the public; to create an interest in Indian customs, costumes and traditions; to encourage the preservation of historic sites as related to the fur-trade and early explorers, and to co-operate with other organizations with similar aims."

RESERVATIONS

It is suggested that those who hope to be able to join one of the Vagabond parties inform the Director of Field Trips which party they are interested in so that a tentative reservation may be made. The parties are strictly limited, making this advisable.

AS THE TWIG . . .

Above, Warren Wilson, Jasper-Glacier '30, at the tender age of three or so. This picture proves that tendencies begin early for here we have this young Vagabond armed with shovel and pail prophetic of the days when he would chase, somewhat similarly armed, over the slopes of Jasper and Glacier in search of wild flower specimens. Warren, if you don't know, is the nephew of Nettie Wilson, Jasper-Glacier '30, President of the Vagabonds of the Trail.

ST. LAWRENCE TRIP POPULAR

Considerable interest has been shown in the tentatively-planned trip in the St. Lawrence-Newfoundland region, touched upon briefly in the booklet, "On Western Trails", on Page 27. We have prepared a condensed itinerary of this trip which has been sent to those who have been specially interested in it and we will be glad to send it to others. This is a remarkably fine trip of special appeal to those who do not feel equal to the more strenuous effort of the trails of the West.

MANY INTERESTED IN PLANS FOR 1931 TRIPS

Requests for Booklet Indicate Fine Vagabond Groups

If the interest evidenced in the booklet "On Western Trails", describing the American Nature Association trips for this year, is any indication, some fine groups of Vagabonds will take to the western trails this summer. Requests have come from people in all walks of life and from all parts of the country for the booklet and for information. But they all have that community of interest in the outdoors and that desire for something different in the way of trips. These factors are what make the Vagabond trips so congenial—these and the limited parties with the leader from the American Nature Asociation and their special Nature guide while on the trail.

While we are writing, may we call attention to a couple of typographical errors which crept into "On Western Trails" in hurrying it to press? On Page 34, under trip Ten, the party leaves El Tovar Hotel on the rim of the Grand Canyon on August 27 and arrives in Chicago August 30. On Page 35, listing the cost of Summer Tourist Round Trip Tickets, the round-trip fare from Boston to Yellowstone and return is $115.90 and from Philadelphia, $103.95. In fact, these round-trip fares were only tentative because the official rates had not been made up for 1931 when the booklet was printed. However, they are virtually exact.

A good many have written asking for additional information about one or another region to which a party will go. This is an invitation to all interested. Just drop the Director of Field Trips a line if you want more literature to help you make up your mind as to the trip which most appeals to you.

A cordial welcome has been extended to the 1931 Vagabonds by the Superintendents of the National Parks to which the parties will go and by the officials at Jasper and Banff and Lake Louise. In Yosemite, for example, Mr. C. A. Harwell, Park Naturalist, is planning to meet the party at Mono Lake and continue on with it during its stay in the Park. Those who have been with previous parties know what a privilege this is.

NATURE MAGAZINE

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To Stimulate Public Interest in Every Phase of Nature and the Out-Of-Doors, and Devoted to the Practical Conservation of the Great Natural Resources of America

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HOLIDAY TIME

An Editorial

OUTSIDE our window the first yellow-green buds of the tulip tree are showing. A gentle rain is falling, after the fashion of April. The grass plot in front of the hotel across the street is a rich, lush emerald. The tang of winter has gone from the air and there is the odor of Spring, even in the city.

Because it is Easter week, the Capital is filled with more than one hundred thousand visitors, most of them young folks. They have come from many parts of our country for a visit to the seat of its government. They have come because in it and near it are enshrined the symbols of historic significance, personal greatness and democratic achievement. From this visit these future citizens will carry back a picture of a beautiful city filled with lovely parks and drives, adorned with imposing architecture. They will have come varying distances and acquired something of value.

With the coming of summer the majority of our people will, at one time or another, be on the move—vacation-bound by motor, train or air. Undoubtedly there are no people in the world who have the will and the means to travel distances for their holidays that Americans have. Equally, none can enjoy a wider variety of vacation experience, ranging from camping in an unspoiled wilderness to the ultra refinements of a resort hotel; from riding mountain trails to skimming along paved highways; from seaside resort to national park.

From these vacations our people return refreshed by the change, however arduous the round of dances, the miles of mountain trail, the hours behind the wheel may have been. Such refreshment is, of course, the object of one's vacation. But, after all, is it the only end? Must the mind also be on vacation? Must the holiday become only a memory, often blurred because its incidents were crammed into too brief a time, as is the American habit?

How one shall spend one's vacation is certainly a personal proposition. Tastes, fortunately, differ widely, but it is worth while giving a thought to the sort of vacation that will outlast the tan; that will outlive the novelty of showing the snapshots, that will endure by virtue of some inspiration, some new knowledge, some idea that it has left with one.

There are many such vacations planned by travel organizations specializing in just that thing. The railroads have furthered them. The national government has set aside great parks and equipped them with means to the fullest enjoyment, both physical and mental. There is a great movement on the part of the states to do likewise. The American Nature Association has responded to a demand and takes limited groups of lovers of the outdoors and the wilder places along the out-of-the-way trails. Many outdoor organizations do similar things.

The thought we wish to leave is that to be really worth taking a vacation should be more than going somewhere just to say that one has been there. To have gazed briefly at some gorgeous bit of scenery —Maligne Lake, Lake Louise, Mount Rainier, the gorge of the Yellowstone, the Grand Canyon—is all well enough. But if one carries away a real appreciation of how these scenic glories came about, what treasures of wild life they hold in their embrace, that is of far more value. It is impossible to form a true picture of anything, be it a personality or a piece of scenery, on a hasty acquaintance. Holiday hours are too valuable to be wasted, life is too fleeting to let moments of leisure be frittered away. It's worthwhile to get something from your holiday.

CANADIAN NATIONAL RAILWAYS

MONARCH OF THE CLIFFS
AND CRAGS—
THE BIGHORN SHEEP

NATURE MAGAZINE

VOLUME 17 JUNE · 1931 NUMBER 6

SHEEP OF SHOVEL PASS

CHASING ELUSIVE BIGHORNS ON THE SHALY SLOPES IN JASPER PARK

BY ARTHUR NEWTON PACK

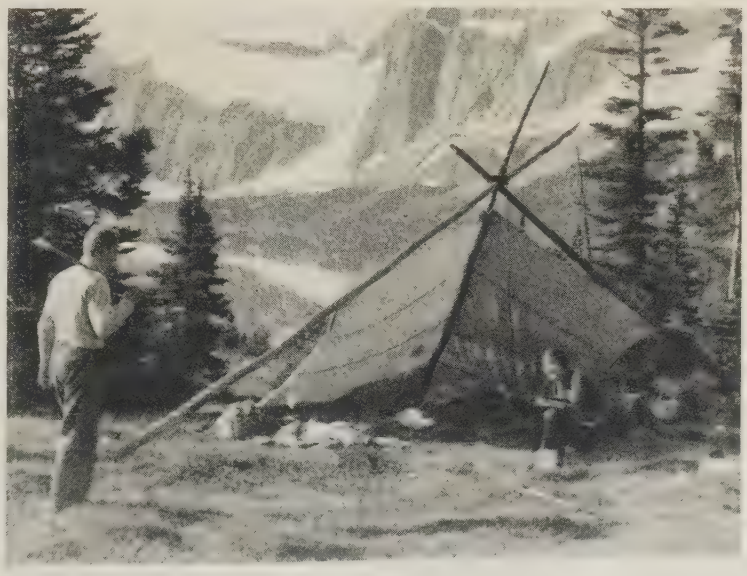
ILLUSTRATIONS, UNLESS OTHERWISE CREDITED, BY THE AUTHOR

WE HAVE hunted mountain goats, mountain lions, and mountain sheep. We have brought home good pictures and poor ones, broken cameras and bruised bones, but always there is hope for better luck. Perhaps some day the unusual will happen. Some day two rams may spar in front of our hiding place; or a lamb will leap over its mother's back; some day an eagle will attack the flock when the camera is ready. To the man with a gun, the head is the goal; the largest horns are perhaps all he can hope to find. He sees his game once within range, he fires, and—if he be a good marksman—the trophy is his. To the camera hunter only is given a continuing hope for the future. For him the final goal is never completely attained.

To Charlie and Walt, our guides, this camera game was a new one. Climbing, crawling, hiding, the many tricks of the hunter after bighorns, they knew. The taste of mountain lamb in camp and even in their homes would be sweet when the hunting season opened. But to approach a wild sheep closer than an sure shot range, to bring a camera hunter near enough for a full frame picture—that was a different game and one they soon found to hold more zest and thrill than any other.

That first morning we left our camp below Shovel Pass in Jasper National Park, Canada's greatest preserve, and rode up the trail with eyes straining for signs of sheep. Here within the boundaries of the park was a great sheep country, now for several years closed to shooting, yet not like a few more civilized parks where the wild things have lost all fear and sometimes have even learned the slipshod way of begging for man's bounty instead of living by their own resources. Eight ewes and youngsters of both sexes we saw that day. A quarter of a mile away they fed with a watchful eye on the trail below, and it was soon evident that they did not welcome our presence. Presently the band began to drift off toward a low saddle and disappeared. The challenge was made.

"We'll have to stalk them," whispered Charlie, "and it will take a good while; but, if you want pictures, come on." He and Walt led the way on hands and knees down into



THE HUNTING PARTY'S BASE CAMP

Here a scant shelter served between forays after the bighorns that roamed the cliffs

the narrow crease of creek bed, where we could at last stand erect without the sheep seeing us. Then up we climbed, with me puffing and panting in the rear, unaccustomed as yet to the eight-thousand-foot elevation. Now, under the brow of the ridge, we were safe from observation and could struggle up the steep slide of slate and shale to the shelter of an overhanging ledge. Walt's plan was to leave me there and circle the mountain basin just out of sight behind the skyline. When he had worked around so that the sheep were between me and him, he would stand up and show himself, and the frightened animals would perhaps make for the little saddle in the ridge where the camera stood. I sat still, resting against the uncomfortable slate as well as possible. Across the main saddle of Shovel Pass, where the trail went, I presently observed three more mountain sheep silhouetted against the sky. Still others followed, until I counted twenty-two, as they passed over the saddle and began to feed slowly towards me. An hour or so passed, while I sat playing idly with the beautifully smooth and flat bits of slate. Then, suddenly, I raised my head at a slight clicking sound.

THEY STOP, LOOK AND LISTEN . . .
The eye of the camera frightened the rams more than did Walt, who tossed rocks at them

Just behind an angle in the hill, but only a hundred feet away, appeared eight horned heads. The sheep saw me and stood staring. Slowly I rose to my knees and began to buzz the camera. The sheep angled up closer in single file, making a lovely picture, silhouetted against the sky. They walked over to the ridge and climbed it in a slow and dignified procession, forming more beautiful silhouettes against the clouds. Then they were gone.

We ate our luncheon sandwiches and then rode on up to the top of the pass. The melting snow had left great patches of soft and treacherous ground, and into one of these walked Brownie's horse. Deeper and deeper he sank, bravely struggling—but in vain. There was no alternative for the rider but to roll off, while the guides came with ropes and helped the animal to safer ground. Fortunately, the soft ground would bear the lighter weight of a man on foot, as otherwise the task would have been difficult indeed. From the main pass no sheep were now visible, as those which I had seen there had taken fright and disappeared. The south side of this defile was walled in by a steep, almost overhanging mountain, practically unclimbable by

BUT SOON FIND A WAY TO ESCAPE
Headlong they followed the leader in a mad dash for cliffs unfrequented by man

"COME ON, LET'S GET OUT OF HERE"
As soon as they hit the open, they showed what they really could do in the way of speed

man from this direction, on account of the snow slides and shale. In a little saddle just to the east of the peak lay a great drift of hard snow which hung out over space. To our astonishment, we saw, with the glasses, six huge rams climbing up over that terrific obstacle, but there was no time to go after them that day. The negotiation of such a mountain would be a long job.

About nine o'clock the next morning we again rode out over Shovel Pass and got another glimpse of the rams on the skyline above the overhanging snow bank. It seemed impossible for any animal to climb up where they were, yet this was evidently a well-established route for sheep. We found another route and worked the horses up into a little pass from which there was a view of the other side of the same peak. Here the mountainside was less precipitous. As we searched with the glasses, we gradually made out about twenty sheep, all rams, we guessed, because at this time of the year the old rams stay together. They are generally not found on the same mountains with the ewes, but seek higher and more precipitous places. Between us and our quarry there was no cover. However, Walt hoped to work along the ridge, keeping out of sight behind the knife edge. From there he would climb the peak and perhaps be able to frighten the animals down towards us. He prospected the first part of this route and returned to say that it would be impossible for me to accompany him with the camera, as the going was too rough to carry anything. The rest of us sat down and ate our lunch sandwiches in a rather discouraged mood. Half an hour later we looked up. Walt had already negotiated the ridge, and we could see him silhouetted

CANADIAN NATIONAL RAILWAYS

WHEN SHEEP COME TO WATER

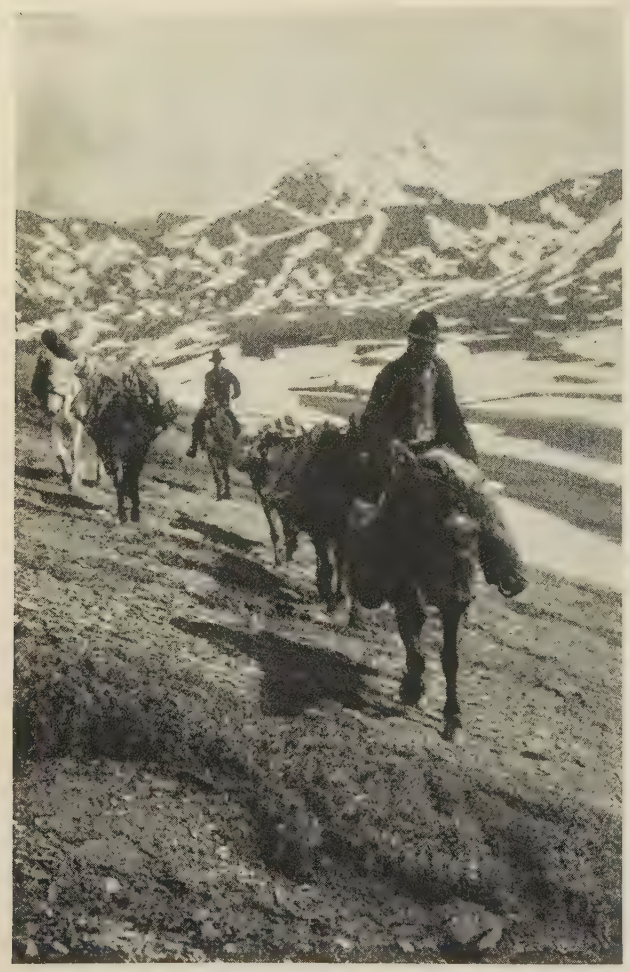
An unusual photograph of a flock that temporarily left their rocky castles. Find the two on the ledge

THE CAMP ROBBER JAY TRIES COFFEE

He steals the author's lunch while no one but the camera-man is looking

in the saddle near the sheep trail; but, alas, all the rams on the mountain seemed to have seen him, too; and, with one accord, they stampeded in the opposite direction. We waved our hats and tried to signal to Walt to come back and give it up, but he did not seem to understand. With the glasses we could see him cross the saddle and start up the main peak, which, from this side, was readily climbable. We found out afterwards that all the sheep had not seen him, but that he had almost stumbled on two big rams lying down near the saddle. They had run crashing off, frightening the others. The going had not been as bad as Walter expected; and, if I had gone with him, with the camera, I might have procured some unbeatable pictures. But such is luck, which is always an important element in big-game hunting.

Now, however, much to our surprise, we saw



TREKKING INTO SHOVEL PASS
The little party winds in on the rugged trail amid the snow banks and the muskeg

some of the rams coming back, and decided to keep on with the original plan: to cross the canyon by skirting the shores of a still frozen lake, and to try to get in some sort of position on the lower slope of the mountain. Charlie, Mrs. Pack (otherwise known as Brownie), and I managed to get across the canyon all right, above the little frozen lake, and scrambled part way up the opposite side, where we were again hidden. Then Brownie turned westward down the canyon, while Charlie and I panted on up.

We reached the saddle at last, and, crawling on our stomachs, looked straight down upon Shovel Pass. We had stopped only long enough to regain our breath and set up the camera, when suddenly Charlie signalled me to lie down. There, running towards us down the mountain, came five rams. Walt must have been able to get in behind them, somehow or other. Perhaps they would come down past where we were sitting. Unfortunately, there was no cover for us, and no possibility of finding cover. Down the snow bank plunged the sheep. It seemed for a moment as if I should get the picture of a lifetime. However, at two hundred fifty yards they turned off down towards Shovel Pass by another easier route that we had not noticed before.

Charlie carrying the camera and I the tripod, we pushed on upward, towards the crossing of the snow bank

WHEN THE GOING GETS SOFT
The melting snow left treacherous patches, and the horse sank to his knees

"WHERE SHALL WE GO NEXT?"
While the camera clicks, the rams try to figure out how to break the cordon of men

just used by the sheep. The whole country was one great rock slide, full of square stones about the size of large building blocks, heaped together in a steep slope. We had seen Walt for a moment on the mountain, and, hoping to find him, we angled off a little bit to the left, circling just below the top of the peak. Had we only kept on towards the snow crossing, all would have been well. Suddenly, I felt Charlie's hand on my shoulder again, and dropped on my face. Three more big rams appeared among the rocks, facing us, only a hundred yards away. They were headed towards the snow crossing used by the other rams. Hastily I mounted the camera on the tripod and

CANADIAN NATIONAL RAILWAYS

BIGHORNS ON THE MOUNTAIN-TOP

These graceful, alert, daring animals make delightful quarry for the camera-hunter

waited, motionless. Again there was no cover. The big rams eyed the camera and the long tube pointing at them, and stood still. A moment later three more big rams came out from behind them and joined the group. If Walt were somewhere behind the sheep, he might drive them closer to us. If we moved, they would run away. Then I thought of the snow crossing which we had not blocked. The sheep might work over to it on an angle and pass us by. "Can't you slip back and cover the snow pass?" I whispered to Charlie. He nodded, dropped on all fours and disappeared. The rams stood, fascinated by the camera. They started to go down to the left, then turned. In that direction stood Walt, just out of sight from me, but I could tell by the actions of the animals that they saw him. They turned to the right. Charlie made a dash for the trail, to get there first, missed it, and almost pitched over the edge of the overhanging snow shelf above it. At any rate, he blocked that way. Now I felt that surely the bighorns would come towards me. I could see Walt now. He was walking right up behind them. They were more afraid of my camera than they were of him. They merely stood and stamped their feet. Walt threw a stone and hit one of the rams on the rump, shouting as he would to a pack horse, "Get out of there, you!" Still, the sheep would not approach that thing mounted on a tripod. Just then one ram saw an open place down at the left. He took it with a bound, and the rest followed. They were gone.

THROWING THE DIAMOND

The author, Charlie and Walt rig out "Packy" with cameras and grub. Note the horse's patient look

Carrying both camera and tripod, I made a precarious way over the great loose rock pile that covered the whole upper third of the mountain. Presently Charlie came up and helped me with the camera. The going was terrible over the great slippery blocks of stone. Three times white-tailed ptarmigan flew up within a few feet of us. Two of them were males, with heavy red marks over the eyes. These birds had a great deal of white plumage, and were like the rock ptarmigan of

"KNOCK ON 'EM. HERE'S CAMP"

The last leg of the journey into sheep country calls forth the cowboy's equivalent to "giddap"

Glacier Park, rather than the willow ptarmigan we had seen in the Tonquin. The last of the three birds, a male, refused to fly, but walked along, hopping from rock to rock, only a few feet ahead of Charlie. It kept just a couple of paces away, as if it were trying to lead us away from a nest, but this was past the nesting season. We could not stop to take photographs of ptarmigan, with a possibility of big rams just around the corner and known to be on the move. Charlie carelessly tossed a rock with his left hand, and it missed the bird by hardly an inch. It flew off a few yards and watched us.

We saw neither Walt nor sheep, but suddenly stumbled out on the edge of the most terrific chasm I have ever seen. The whole face of the mountain towards Shovel Pass was absolutely sheer, with a slight overhang. Not even a sheep would attempt to descend there, except in final desperation. Far below, on the north side, we saw two rams, probably from the first bunch which we had seen escape by the snow pass. Charlie and I pried loose boulders and rolled them down, hoping that the sheep might come back some other way. After the first drop, the boulders broke into a hundred pieces and splintered away, rattling down and down. One rolled clear across a distant snow patch and out on the main basin of Shovel Pass; but the wise animals, of course, had stopped in a place where landslides gave them nothing to fear. All rocks would go far to the right or left. I took some pictures of the marvelously spectacular cliff, but the atmosphere was smoky with forest fire smoke.

There are plenty of sheep in the Shovel Pass region. One day we sighted a large herd in the distance and counted at least fifty at one time. But the rams, which we most wanted, were now scattered and wild. They had had enough of Walt that day on the big peak and were now so wary that all our efforts to get close to them seemed in vain. Unquestionably, many sheep were spending the day in some of the little pockets or basins behind the northern skyline, and those we decided to go after. Accordingly, we rode out one day and laboriously climbed over the great shaly wall which overlooked the whole expanse of country leading northwards toward Medicine Lake. No sheep were visible. There seemed to be a side basin farther to the left, but hidden by a shoulder of the shaly ridge we were on. We rode a little way over towards this, and then, leaving the horses, Walt and I set out on foot across slides of snow and slate. At last—there were the sheep, lying down in the bed of a creek at the very bottom of the canyon. It was agreed that Brownie and Charlie should work down from where the horses were and across the canyon. I had now had considerable experience with trying to approach sheep openly or to persuade them to approach the camera in the open, and it had not worked out very well. I decided to stay where I was, as I had an excellent natural blind of rock, right in the line of a sheep trail coming out of the basin. Walter worked on around the westward end of the basin, keeping out of sight. Meanwhile, Charlie and Brownie had slipped and skidded down a thousand feet over shale and snow to a glacial lake, and then crept along a glacial moraine at the bottom, keeping out of sight. Once safely across, Charlie helped Brownie carry the movie camera and tripod part way up the other side, where he left her and detoured to help Walter "herd" sheep. This time I determined not to set up the camera on the tripod at all, as experience had shown that the animals were more afraid of the visible camera with its long tube of telephoto lens than of a man alone. I was determined to have a real close-up or nothing. I lay behind my rock and from time to time took off my hat and peered out. The sheep came part way towards me once and then turned down again and followed up the bed of the creek. There was a way out there, and Walt had undertaken to go and block it. Charlie was also working around from the other side of the basin. An hour or more passed. Then something seemed to frighten the sheep back towards my side. Charlie must be over there, and they had either seen or winded him. They tried to work up the head of the creek, and this time I heard a faint yell which sounded unmistakably like Walt's. As usual, he was right on the job. Now the sheep were turning back. They were coming my way. There were some young rams, too. The vanguard of the flock came as far as the snow bank, two hundred yards away. Two old ewes kept on. They walked out on another snow bank, a hundred yards from my rock, pawed, and licked the snow. Now I saw Walt on the pass at the head of the basin. The whole remaining herd of thirty or more sheep were ahead of him, coming towards me again. I lay motionless behind my shelter. The hard hoofs of the animals clicked nearer and nearer on the rock. The sheep moved very slowly, all converging directly on my hiding place. If I raised myself and used the camera now, they would see me and run, and I should get nothing better than I had before. I lay prone. Minutes passed. Nearer came the clicking of hoofs on loose rock. Nearer and nearer. Surely, now the animals were about to step right on my prostrate body. With one finger I set the focus on my lens at twenty feet. Slowly I raised my head. There, looking squarely into my face, was a young ram, with several ewes. The camera buzzed. I dropped again, to rewind it. There were sheep on three sides of me now, and that incessant clicking of hoofs on rock. None of the thirty was more than seventy-five feet away. What a sight! I dropped again to wind the camera. Hoofs clattered on rock. When I rose again, they were running as if Satan himself were after them.

Now, far across Shovel Pass, we saw a line of horsemen coming—a regular tourist party, no doubt. We pictured their guide telling them to look for sheep on the mountains. They would see none, after our days of strenuous hunting, we guessed. As we had now finished lunch, we packed up the cameras on the faithful old pack horse and rode over the shaly ridge to sweep down on trail and tourists, like bandits in a movie. We could picture their astonishment and, more, the surprise of their guide, who would be unable to explain so strange an event in country where "sensible" folk stay on trails.

ADULT WHITE PELICANS SWARM UP AT THE PHOTOGRAPHER'S APPROACH

They leave their nests in alarm and the camera might have been swung in any direction to get this picture

SALTON SEA BIRD REFUGE

NOW SANCTUARY TO MYRIAD WATER BIRDS

BY JOHN EDWIN HOGG

RECENT press reports announced the creation of a bird refuge embracing all Government lands bordering the south shore of the Salton Sea in southern California. Nature lovers and wild life conservationists hail this bit of news with joy, for it means more adequate protection of one of the most remarkable bird life areas to be found anywhere within the limits of the southwestern United States. It brings to an end much of the wanton slaughter of bird life against which numerous protests have been heard over a period of years.

In order to understand what sort of a place the newly-created bird refuge is, it is necessary to go back into geological history a bit. Tens or hundreds of thousands of years ago, the Gulf of California extended much farther north than it does at present. The Colorado River, carrying at times one per cent of silt by volume, has poured its floods into the Gulf down through the ages. Eventually the river built a great dam of silt completely across the waters, cut a new opening into the Gulf of California to the south, and the northern end of the area became a vast salty lake cut off from the rest of the inlet. The region being virtually rainless, the landlocked lake eventually dried up, and its bottom, lying below sea level, became the now famous Coachella and Imperial Valleys of California. Then new channels were cut and a part of the basin that ages ago was the northern part of the gulf became the vast salt lake now known as the Salton Sea. This inland sea is approximately thirty miles in length and from eight to fourteen miles in width. Its maximum depth is about sixty-five feet, and its surface

THE NEST AND EGGS OF ONE OF THE TERNS

One of innumerable such nests to be found in the new Salton Sea refuge

A BABY TERN LEARNING HOW EXTREMELY FAST TIME FLIES THESE DAYS

During the nesting season there were so many of these birds that one could not have counted them

level is at present 258 feet below ocean level. Its water is slightly more saline than ocean water.

The Imperial and Coachella Valleys, once a burned-out, waterless waste, are now irrigated from the waters of the Colorado River and from the melting snows of the San Gorgonio and San Jacinto Mountains. These two valleys are among the richest agricultural areas on the face of the earth, with the Salton Sea forming a convenient overflow basin for surplus irrigation waters. And by man-made efforts the level of the Salton Sea is now permanently established for the maintenance of its benign influence upon an otherwise torrid region.

Mullets from the Gulf of California abound in the Salton Sea and now support a valuable commercial fishing industry. The California State Fish and Game Commission has stocked it with striped bass, lobsters, and crabs. Innumerable thousands of aquatic birds make it their permanent or temporary home. During the spring and fall migrations the Salton Sea is dotted with "floating islands" of ducks, geese, and other waterfowl; and during the summer months the numerous islands and marshlands along the south shores hold the nesting rookeries of cormorants, pelicans, terns, herons, gulls, and other ichthyophagous birds.

With paved roads leading almost to the shore of the Salton Sea from various parts of California, the slaughter of bird life there, at times, has been wanton and appalling. A number of reputable gun clubs sprang up at various localities. The operators of these clubs were far-sighted enough to realize that their commercial existence depended upon maintaining an abundance of migratory game. They have helped to enforce the state game laws and ethical methods of sportsmanship. Such clubs, however, could not extend their influence to so vast an area as the whole Salton Sea and its shores. Various "fly-by-night gun clubs" sprang up on Government lands. Any pot-shooter could drive down from Los Angeles in about six hours, unload a motor boat off a trailer, and go to work on the sea with a swivel gun. Others motored down, hung outboard motors on rented boats, and bombarded the birds irrespective of bag limits, or other specifications of the state game laws. The farmers of the Imperial Valley have long regarded the waterfowl as a pest, hence public sentiment for the enforcement of the game laws has been lacking. Any kind of shooting went —from powerboats, with swivel guns, day or night, and irrespective of bag limits. It is little wonder that the waterfowl life on the Salton Sea has shown marked diminution during the past few years! The establishment of a Federal bird refuge along the south shore, and in the adjacent island breeding grounds, is the answer to the conservationists who have viewed this situation with alarm.

In the early summer of 1924 I visited the islands along the south shore of the Salton Sea for the purpose of photographing and studying the wild life of the bird rookeries there. I made the trip of eighteen miles across the sea from Mullet Island in a rowboat powered with an outboard motor. The boat was rented from Captain Charles E. Davis, the owner of Mullet Island, developer

of the mullet fisheries, and staunch advocate of protection for every desirable species that lives in or about the Salton Sea. My objective on this trip was Pelican Island, a sand bar some ten acres in area, the breeding ground of innumerable white pelicans, cormorants, terns, herons, and other water birds. Landing on the island I found everything I'd gone there for. The whole island was so covered with nests it was almost difficult to walk without stepping upon a nest containing eggs, or upon birds of all ages, from barely out of the eggshells to fledglings capable of short flights. I made my photographs, took my notes, and came away. I had no sooner returned to my boat than every mother bird was back on her nest as before.

Returning to Pelican Island for a similar purpose in June, 1926, I "putt-putted" across from Mullet Island, and upon approaching Pelican Island could not see a single bird even with a pair of eight-power binoculars. I came within fifty feet of the shore, and there wasn't a bird in sight. In the center of the island, however, there appeared a large shack with an abnormally large smokestack from which belched a tremendous cloud of black smoke. As I attempted to land, a man appeared in the door of the shack with a high-powered rifle in his hands. He raised the rifle and fired, the bullet singing past uncomfortably close to my head. Several more shots were fired, and I was motioned to get back in my boat and drive on. Only a lunatic would have done otherwise!

As I diverted my course to some of the other islands, where I found the bird rookeries I was seeking, I formed my own opinion concerning the nature of the establishment that had appeared on Pelican Island. This opinion was later verified by various residents about the Salton Sea who informed me that the place is a moonshining plant. The disappearance of the birds from the island is accounted for by the fact that a bird rookery which attracts occasional tourists and Nature lovers is not a desirable neighbor for a moonshining enterprise. Hence, the moonshiners upon taking up their quarters on the island, are said (Continued on page 409)

BABY PELICAN EMERGES FROM ITS SHELL

It took ten minutes to get this far out. Five minutes later the other egg in the pelican nest hatched

A GROUP OF IMMATURE WHITE PELICANS

The birds are too young to fly and hence can be herded together like a flock of domestic sheep

BRYCE IS AT ITS BEST IN MID-AFTERNOON

Then, viewed from the rim, the shadows, less dense than those of early morning, are softened by reflections from neighboring cliffs

EARLY MORNING CASTS LONG SHADOWS IN BRYCE CANYON

Then there is a beauty not a little tempered by shadows that lend mystery and awesomeness to the place

GLORIOUS BRYCE CANYON

BY HUGH STEVENS BELL

ILLUSTRATIONS BY THE AUTHOR

OF ALL our great national parks Bryce Canyon, Utah, is the most fantastic and the least appreciated. Mr. and Mrs. American Tourist visit it each season by the thousand, and, of course, the little Tourists come with them.

When they arrive they rush to look over the rim into a great amphitheater which is filled with queer shapes and beautiful colors. Everything that is there has been hidden from them until the instant they reach the very edge of the canyon. What they see fairly takes their breath for a few seconds. Then they "Oh" at this, and "Ah" about that. Someone says, "Ain't it pretty? Look at that funny doodad over there. Wish I could push it off."

Fifteen minutes later they are roaring away to Zion National Park to bestow upon it a full half hour of their valuable time. They seem bent upon visiting both parks in a single day, with time enough left to reach some ugly little hotel near the railroad before darkness comes. In years to come they will have the rather hollow pleasure of being able to say that they have been there, but they can never honestly say that they have seen either Bryce or Zion.

Unfortunately such hurried visitors are the rule rather than the exception. They are the same average American citizens who "do" the American Museum of Natural History from ten until twelve in the morning, and the Metropolitan between one and three that afternoon before they rush off to the Bronx.

The entire park area at Bryce contains twenty-three square miles. One can not really see it in fifteen minutes. Five times I have made the long pilgrimage to marvel at its wonders. In fifteen days I have managed to explore, none too thoroughly, three of the six square miles that

WEIRD ORNAMENTATIONS OF NATURE'S OWN CARVING

Strange stone figures perch like cats upon a wall, or, perhaps, the visitor will see something else in them

form the huge amphitheater which is mistakenly called a canyon.

For everyone Bryce holds some surprise. It may be nothing more than a frozen radiator or a blizzard in the first week of September, it may be a new stone citizen missed in earlier explorations, or enough fossils to make pockets bulge as do those of a boy during top-spinning season.

One of the biggest surprises Bryce ever gave me was connected with fossil shells. For three days we had been making photographs in one small area where shells were abundant. Time and again we had tried unsuccessfully to locate the ledge from which they came.

A thunderstorm broke upon us without an instant's warning. Fortunately a small cave was near, and we crowded into it as rain fell in torrents. A thousand rivulets rushed into every valley, swelling all with variously colored muddy water which looked for all the world like streams of melted vanilla, peach, strawberry, and chocolate ice cream. Before our very eyes running water was carving out a new and slightly different Bryce.

There was a dazzling flash of lightning, and the earth trembled with the roar of thunder. A stone crashed from the roof of our cave and fell within a foot of my hand, showing that even thunder has joined with rain, snow, wind, heat, cold, and running water in the formation of that colorful spectacle.

I picked up the stone to estimate the damage it might have done to my hand. Imagine my surprise when it proved to be literally filled with shells exactly like those we had been finding for days! No longer was the location of the mother ledge in doubt. The entire roof of the cave was richly ornamented with fossils.

The rocks of Bryce Canyon have been variously described by geologists as sandstones, shaly sandstones, and sandy shales. Probably the first diagnosis was made in very dry weather, the second in ordinary weather, and the third after a heavy shower. It has been said that in dry weather a hiker in Bryce leaves no tracks, although horses break through the surface crust and leave distinct

Bryce Canyon will be visited again this year by one of the American Nature Association's Vagabond parties. These folks will not devote fifteen minutes to this glorious place but will linger for forty-eight hours. In the same way they will see Zion and the Grand Canyon. Come on along with us.

trails. It may be added that the man afoot leaves no tracks in wet weather either. He simply picks them up and takes them with him, for there is gumbo everywhere.

We eventually crawled out of our cave and began the long, weary, slippery climb toward the rim and our camp, nearly one thousand feet above us and a mile away. Soon we were in sight of a conspicuous formation known as Osler's Castle, the most attractive part of which is an interesting natural bridge or arch.

To our surprise we noticed a delightful clown standing near it, one of those roly-poly fellows with a weight in the bottom who insists upon standing up again no matter how often he may be knocked down.

We turned toward it, bent upon making a picture, although it was growing late. Already our boots had picked up mud enough to make going difficult, and our trail might easily have been mistaken for that of a bull elephant. In the picture we made there is a stone head, Nature-carved, which must represent a maiden lady who taught school for fifty years and never

TOWER BRIDGE IN BRYCE CANYON

This is hidden in the canyon and visitors cannot see it from the rim

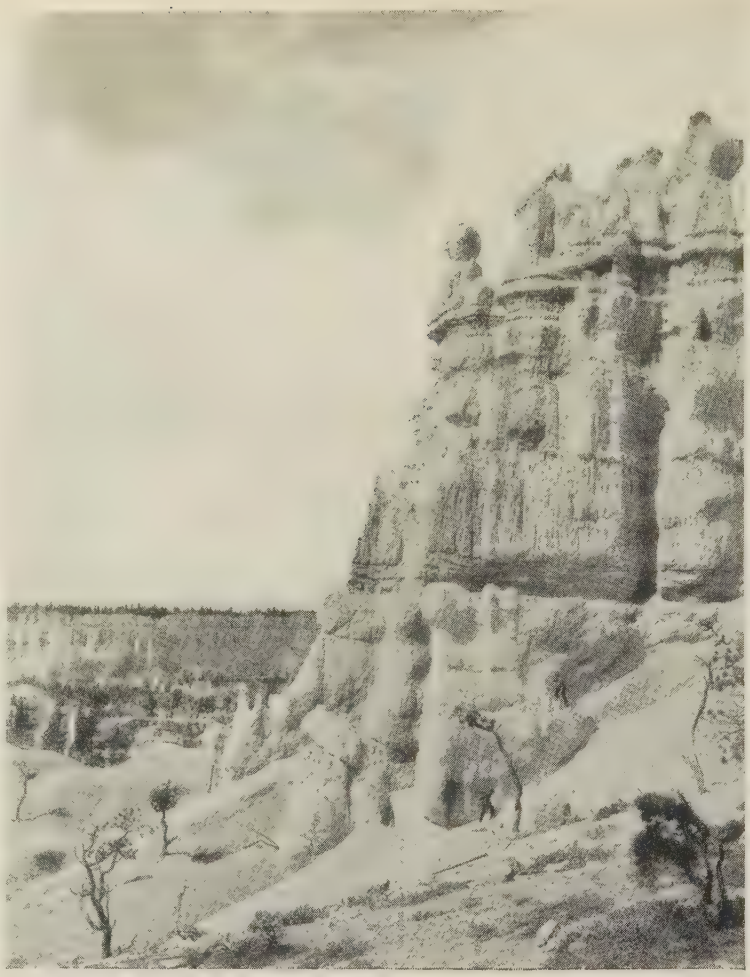
OSLER'S CASTLE AND ITS INTERESTING NATURAL ARCH

One of the many fascinating configurations in Bryce where the imagination does not need to be even fertile to see much

found any pleasure in her work.

There are actually thousands of such stone people waiting to greet those who have time and the inclination to seek them out. One of the most beautiful children I know is always there to welcome me. Nature alone has carved her from stone as white as the finest marble. Near her Queen Victoria stands upon a snowy pedestal in portly regality. Not far away a corpulent monk, hood thrown back, chin upon his chest, hands folded piously upon a generous paunch, prays unceasingly.

A mile or so from this group is a whole parade of interesting people. A Dutch mother and father are out for a stroll with their lovely children, a chunky boy and a buxom girl, both in their early 'teens. Near them stands a beautiful girl from colonial days, her head bowed bashfully. Nearby are other interesting figures.



EXAMINING THE GIANT'S BOOT
It is upside down and needs the heel repaired. At the cliff edge is the unfinished bust of Wilson

Many and very real are the stonefolk who abide in Bryce, hiding forever from those hurrying thousands who have only fifteen minutes to spare for one of the wonder spots of the world.

There was once a man who drank three bottles of a patented wart medicine, and grew warts on his warts. Bryce has been drinking heavy rains and deep snows for a million years or so, and has succeeded in producing balanced rocks upon balanced rocks which are really far more interesting than warts, unless the warts happen to be your own.

The majority of the people in America spend at least a part of their lives wondering what a gargoyle is. There are many gargoyles in Bryce, also gewgaws, doobisons, jimcracks, whatnots, and bullwhinyons. Spires, pinnacles, towers, postern gates, steeples, needles, minarets, pagodas, columns, temples, castles, natural bridges, arches and windows are to be found in abundance. Anyone with eyes and an imagination will find it difficult to spend an uninteresting minute on the trails below the rim.

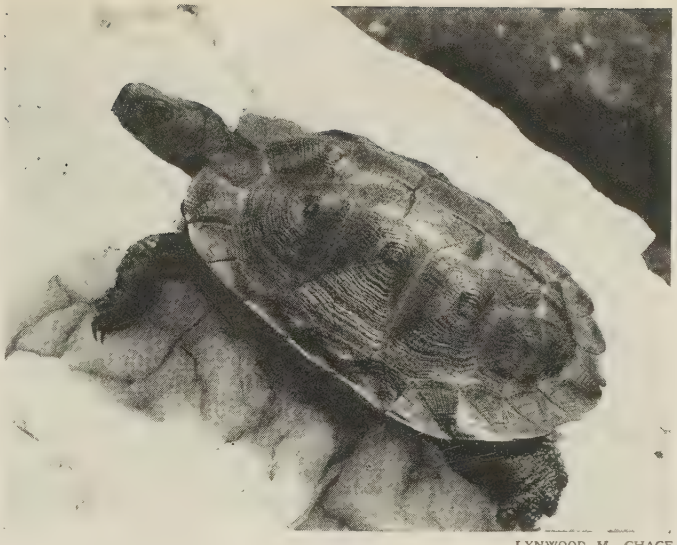
From the rim there is much of beauty for anyone who cares to linger there. Pink, white, cream, apricot, tan, and rust—such are the colors of the weirdly eroded rocks which form the great bowl. Here one looks out over an oriental city filled with minarets and towering spires. At his feet lies a huge organ with countless pipes, tier upon tier. Over there is a dainty castle, delicate enough to be the home of fairies.

And always this strange panorama is changing. At sunrise long shadows fill the canyon, as walls and pinnacles stand out boldly. It seems an impenetrable mass of tumbled ruins. At high noon everything has been softened and flattened surprisingly, yet it remains rugged enough to make the timid hesitate before exploring. As shadows again grow long in late afternoon the sun sets behind Paunsaugunt Plateau, the soft shadows of which rapidly fill the amphitheater and make it most inviting.

It is weirdly wonderful by moonlight, and surprisingly visible by starlight. Then the white rocks stand out indistinctly like ghosts, and an unbridled imagination can conjure up most amazing things.

Occasionally at sunrise the whole bowl is filled nearly to the brim with thick clouds through which the taller formations push their way to form strange islands in a milky sea.

Bryce is, in truth, a glorious place. No matter what the time of day, no matter what the weather or the season, it is always beautiful, always alluring, always ready to reward generously those who have learned to see.



LYNWOOD M. CHACE

HAVE YOU A TERRARIUM-AQUARIUM?

Those who have turtles for pets find endless enjoyment in them, as in other reptiles

ENJOYING REPTILE PETS

THEY MAKE LIFE INTERESTING

BY HELEN DOLMAN

YPSILANTI TEACHERS COLLEGE

IF, like the proverbial small boy, you have a fondness for the graceful, striped creatures that go slipping through the grass, hunting insects; if you can find amusement in the queer sliding gait of a mud turtle; if the swift motion and curious ways of brilliant lizards have always fascinated you, read on. If perchance you are one of those individuals to whom the word reptile is repulsive because of early training; if the sight of a snake perchance sends cold shivers up and down your spine, read also. Experience teaches that the acquaintance which results from caring for these animals removes much of the foolish fear of them and leads to real understanding of a maligned portion of the animal kingdom.

From the comical horned "toad", with his armored coat, his beady black eyes and his amiable disposition, to the more antagonistic alligator, all respond to care and kindness and become interesting pets.

In a region where water is plentiful, you will find many kinds of water loving turtles. The painted turtle, the map turtle and the snapping turtle are common inhabitants of the Great Lakes region. All of these are easily kept in captivity, though the snapper must be handled with care and doesn't make such a nice pet. I think that the painted turtle is the most docile and attractive one, but any small turtle may be put into an aquarium. Never put them in the same container with fish or tadpoles or you may find the fish losing their tails or the tadpoles disappearing.

Turtles prefer a terrarium-aquarium, that is, a tank with water in one end and sand in the other. This gives them an opportunity to crawl up on the sand and sun themselves. A stone or two in the water serves the purpose quite well and also gives them a hiding place. As in the case of amphibians, there is more danger of giving them too much heat than of giving them too little. Thirty horned "toads" left one July day for a short time on top of a radiator died, in spite of all efforts to revive them, when the heat was accidentally turned on.

Box turtles, the land members of this group, require little care. A cage with sand in the bottom satisfies their needs and I have even allowed large ones to wander around loose in the school room.

All turtles may be fed on small pieces of meat, which they will tear with their beaks and claws.

Young garter snakes are easily kept in captivity and become quite tame. Care should be taken in handling any kind of a snake, for though there are few poisonous ones, in most regions, many of them can strike if they are hurt or frightened. I have never been struck by a snake but I saw a non-poisonous snake bury its teeth in a boy's hand, one time, when he caught it and squeezed it. I am told that even a garter snake will do the same if handled roughly. But kept in a wire or glass cage, with sand in the bottom and a flask of water in which to moisten their skins, they make harmless and instructive pets.

These non-poisonous snakes feed upon insects and frogs. If the natural food can be obtained, it is the best thing to give them, but lacking this, they will eat earthworms or small bits of beef. These may be offered them with tweezers or on the end of a long wire, if one is hesitant about getting any closer to the snake.

When a snake is getting ready to lose his skin, he is unable to see for a few days, doesn't eat and is sluggish. At this time a few branches in his cage will help him in pulling off the old skin. Subsequently he is ravenous.

Lizards are very easily kept in glass cages or empty aquaria, with sand in the bottom and a cover of wire netting over the top. An insect net full of the sweepings from the grass and bushes will furnish a meal for a number of these graceful, silent desert lovers.

I find alligators too difficult to care for to pay for the trouble. But to those who might like to try it, let me advise you to get a young one and bring him up in the way he should go. They like a tank with enough water to cover them and enough room to move about. They are meat eating, also, preferring fish, but will dive into crayfish with relish. Sometimes they refuse to eat anything at all. They are curious pets, always inter- (Continued on page 412)

THE PLANT WITH A PERSONALITY

THE JIMSON, DRUG, DELIRIANT, VAGABOND, AND ENEMY

BY ERNEST ELWOOD STANFORD

IN ALMOST every barnyard in the Middle and Atlantic States, particularly southward, and occasionally through a much wider range, may be seen a rankly sturdy growth of branching, evil-smelling weeds with peculiar wavy-toothed leaves. The flowers are trumpet-shaped, somewhat like those of the morning glory. They open briefly in evening, as though for the special benefit of dusky moths whose long proboscides seem fitted by Nature to probe the depths of the pale cornucopias, so dimly visible in the darkness. The flowers are followed by seed-pods slightly resembling a small green apple, but stoutly guarded by harsh thorns. Inside is a multitude of dull-brown or black seeds, whose hard shells may protect the inner life for many years in the depths of the soil, or elsewhere where conditions are unfavorable for germination.

THE SMITHSONIAN INSTITUTION

WHERE THE DRUG CONCENTRATES MOST

From the seed-pods the Algonquin and other Indians manufactured the narcotic for their ceremonials

The farmer, perhaps including a few adjectives unknown to published botanies, calls these plants "Jimsons," or, occasionally, "Thornapples," although the latter name is more commonly given to an American version of the hawthorn, the *Crataegus* of the scientist, and a real relative of the apple, which the jimson decidedly is not.

Jimsons, at their best—or worst—are vigorous and husky plants, asking little of life save good soil and plenty of sun. Insects bother them little, though the leaves are generally shot-holed by the flea-beetle, a nervous creature whose jerky movements, one sometimes believes, are over-stimulated by certain constituents of the plant. At any rate, the flea-beetle does not stay in one place long enough to interfere much with what the botanist calls photosynthetic tissue. Jimsons are also contemptuous of disease as far as serious results to themselves are concerned, though they have been proved to be hold-over hosts for wilts, mosaics, aphids, and other disease and insect pests which irritate the farmer when they leave the ill-smelling foliage of jimson for the more valuable related crops of tomatoes, potatoes, or tobacco.

The genus *Datura,* of which the jimsons are the principal North-American representatives, is a widespread and interesting one. Some plants of the genus are beautiful, some useful, some both, and some neither; but none lack personality. There are two rather well-marked forms of what, from the historical viewpoint, we may call the true jimson. One, a sort of brunette, has dark-purplish stems, deep-green leaves, and faint-violet blossoms. Its blonde sister is paler throughout; its evening trumpets are neither brazen nor silver, but of a medial tint. For more than a century the two were termed distinct species; the blonde as *Datura stramonium* and the brunette as *Datura tatula.* Recent studies by those inveterate students of heredity and relationship, the geneticists, have shown quite clearly that the two "species" differ mainly in coloration and a few other details which seem to go with it, somewhat as the average Scandinavian differs in complexion and some other characters from the darker-skinned Sicilian. Moreover, in crosses between the jimsons, the pigmentation of the progeny follows the same "law of dominance" that would obtain among the offspring of a Swedish-Sicilian marriage. All of the first generation is dark, but if these hybrids are mated with plants of the same antecedents, the light or recessive

BUREAU OF PLANT INDUSTRY

THE UGLY, SCRAGGLY PLANT THAT FARMERS DISLIKE

A row of jimsons progressing nicely. The plant is almost immune to disease, and cares only for sun and good soil

color appears in the next generation in about the proportion of one blonde to three brunettes. In view of these facts, Linnaeus himself, the learned old botanist who christened the two as separate species, would be the first today to decide them as but forms of one.

While the geneticist has employed jimsons in his delving into obscure but vital laws of heredity, his studies are but one extreme of the gamut of human interest in these rankly growing, sun-loving weeds of the barnyard. The name, for instance, is a corruption of "Jamestown," with its reminiscences of 1607, Captain John Smith, Pocahontas, and the Starving Time. During the latter period, the famished Virginia colonists were but slightly particular as to the ingredients of the pot. Among their experimental greens was a "mess" of jimson weeds, which, from their fresh succulent looking early vernal growth, must have looked exceedingly attractive to the starving settlers, though one would think their odor would have been a deterrent. The result of the daturic feast was quite unlooked-for. An early chronicler says that the eaters "turn'd natural Fools upon it for several Days." Delusion and delirium continued for nearly two weeks, and some accounts imply that several settlers died.

As their acquaintance with the natives progressed, the early Virginians learned that the red men employed the delirium of datura in a ceremony that initiated young warriors to manhood. "Huskanawing" consisted in a lengthy intoxication of the neophytes with a jimson preparation known as "wysoccan," after which, supposedly, the initiates forgot every detail of their earlier existence, even the use and understanding of speech. "Thus they unlive their former lives, and commence men by forgetting that they ever have been boys." Any victim unlucky enough to betray any remembrance of former things was immediately re-huskanawed by his indignant elders, who, probably feeling the lapse a reflection on

THE SMITHSONIAN INSTITUTION

THE ANGEL'S TRUMPET, FROM BRAZIL

Probably it got its name from its use, by oracles, to produce their omniscient trances

BUREAU OF PLANT INDUSTRY

A PROFILE OF THE VERSATILE JIMSON

The trumpet-like flower attracts insects, but the odorous leaves and thorny seed-pods are ample protection against other forms of wild life

their ceremonial technique, repeated the process so vigorously that the huskanawee rarely escaped with his life. It is interesting to know that similar uses of other daturas have been found among the Indians of Mexico, the Southwest, and in California, and that aboriginal medicine men have relied upon their inspiration in pretended oracular converse with supernatural beings. A particularly large and beautiful South American species is called "Angel's Trumpet," possibly because of such use.

In the Orient, where still other species are found, their products are employed as narcotics and poisons. The original Thugs, an interesting sect of Orientals who considered murder a religious duty, prepared "knock-out drops" from *Datura* seeds. Ten drops were powerful enough to render a man insensible for two days—at the end of which time he usually had been dead from other causes some forty-seven hours. In the Orient, also, *Datura* leaves and seeds figure as a minor ingredient in "hasheesh," a narcotic and deliriant product against the use of which the British Indian Government has battled.

"Civilized" people, even in these days of prohibition, do not experiment with the dangerous delirium of *Datura.* Children occasionally mistake the prickly, unpleasant looking green fruit for something edible, but usually recover if a competent physician be summoned soon enough. Jimsons, though common barnyard weeds, seem rarely to cause the death of animals. Their tenderer parts are usually avoided by stock, and the harsh and prickly pod is abundant protection for the seeds, in which the poison is especially concentrated. A South African authority reports that *Datura* seeds are especially poisonous to young ostriches—but American farmers have experienced little trouble in this respect, for obvious reasons.

Like many other poisonous plants, the daturas have found considerable use in medicine. Besides the ceremonial purposes mentioned, Indian tribes have used them as curatives, on the theory, perhaps, that a plant which produced such marked psychological results ought to be good for almost anything. In colonial domestic practice the bruised fresh leaves were used in pain-palliating poultices for bruises and wounds, and the dried foliage was smoked to relieve asthma. The modern chemist finds in jimson an alkaloid closely related to atropine,—which indeed may be derived from it. This extract is used by the oculist and by many another medicinal practitioner. That august authority, the *United States Pharmacopoeia,* houses the leaves under the name of stramonium, and from this and allied products many "belladonna plasters" and anodyne preparations have been made.

Jimson leaves for drug purposes are gathered in the southern Appalachian region and in Missouri, but by far the larger part is imported from Europe. Most of our "American" weeds, like most of our "American" people, are of European origin, but Europe has been little more invaded by native American weeds than by the American Indian. Jimsons, however, as weeds of ship-ballast and cultivation, have become so thoroughly established abroad that most botanies list them as of European origin. The American farmer, in need of relief or not, finds his time far too valuable to collect and dry products which can be imported from Germany or the sundered remnants of Austria-Hungary for a few cents a pound. During the war, however, the price of expatriated jimson skyrocketed, for concurrently with the shutting off of European sup-

plies came increased demand for pain-relieving preparations, in which stramonium is a valued ingredient. Much was collected in America, and some was even cultivated here. Perhaps jimson is the only American weed that a Congress ever attempted to protect, for in the post-war tariff of 1922 stramonium is listed as dutiable at twenty-five percent ad valorem. This distinction was due not to any efforts of the "farm bloc," but to remembrance of the war-time scarcity of the drug. When the Smoot-Hawley tariff was passed in 1930, stramonium went back to the free list, for the solons felt that, since this product costs fifty cents a pound to prepare domestically, and imports can be brought into New York at eight or ten cents, the industry of collecting jimson would probably stay in foreign parts, no matter how high became the tariff wall. Thus, truly, is jimson a plant with personality.

MODEL ANT HOUSE

IT IS IDEAL FOR STUDY

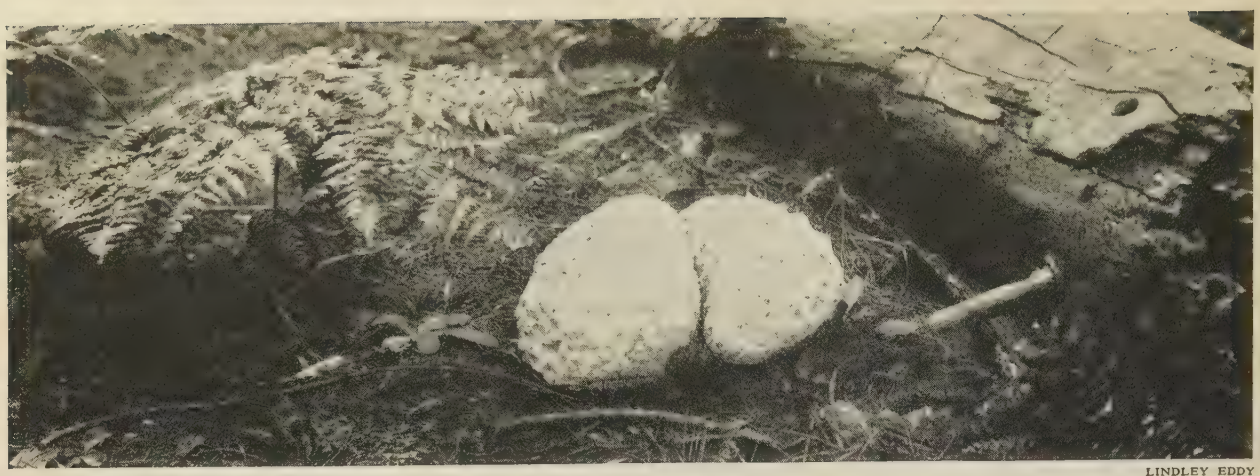
BY ELINOR GOODING
HANOVER (N. H.) HIGH SCHOOL

IN Hanover, New Hampshire, the seat of Dartmouth College, Professor Frank E. Austin conducts a workshop for boys and girls in which the children make bird houses, feeding stations and other objects which help them enjoy Nature. Among Dr. Austin's many inventions is a most interesting ant house, pictured below. It consists of a glass base and glass cover, with a space left between to be filled with layers of dirt and sand—and an ant colony. In the top are holes through which the ants receive food, water and air.

Through the glass, the entire busy life of the ant family can be watched, and their marvellous organization studied. Their collaboration in building their little homes, starting first with the queen ant's room; their tunnel building; their process of bringing up the young become a stage performance under one's eyes.

The queen ant lays the eggs for the entire colony, and few human babies receive better care than do the ant infants. Often the eggs are laid out in the sun to warm, a process one can watch under a magnifying glass. After the eggs develop into cocoons, it is interesting to see the ants carrying the cocoons through the tunnels, working rapidly all the time.

Many Hanover children are utilizing these model homes for pleasure and study, and the number of "ant-fans" grows apace as the enthusiasm continues to spread.



LINDLEY EDDY

TWO SIERRAN PUFFBALLS
Growing close together in rich humus near General Sherman Tree

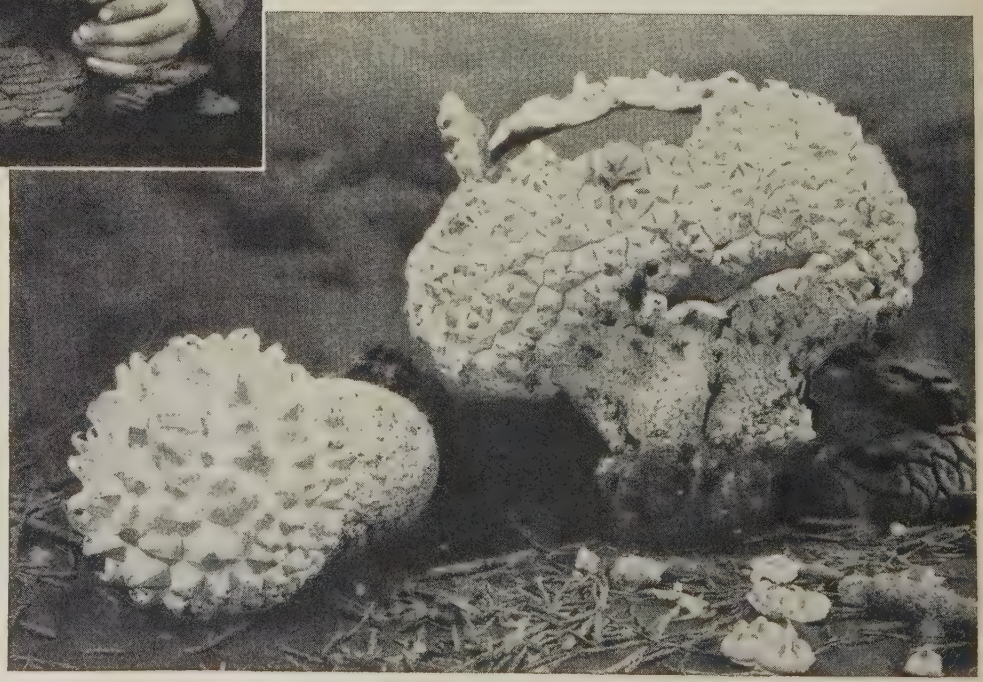
THE SPINED PUFFBALL

BY ELIZABETH EATON MORSE
SECRETARY, CALIFORNIA MYCOLOGICAL SOCIETY

THE spined puffball, *Calvatia sculpta*, has been California's pride because it had never been reported from any locality on the earth's surface except in the Sierra. Now, she must share her boast with Oregon, because a very beautiful colony of the spined puffballs has been discovered on the rim drive at Crater Lake. This appears to be a mountain species, found usually at between three thousand and eight thousand feet elevation.

The largest specimen of *Calvatia sculpta* which has come to our attention grew in General Grant National Park in a shaded glen. Measured, it was found to be twenty-nine inches in circumference and tipped the scales to four and one-half pounds; but this was most unusual. They may be found weighing one pound, but oftener are much less in weight. Very lovely specimens have been observed in Yosemite and Sequoia National

H. E. ROBERTS
COMPARING NOTES—OR, RATHER, PUFFBALLS
Keith Cunningham compares the spiny puffball with a close relative



LINDLEY EDDY

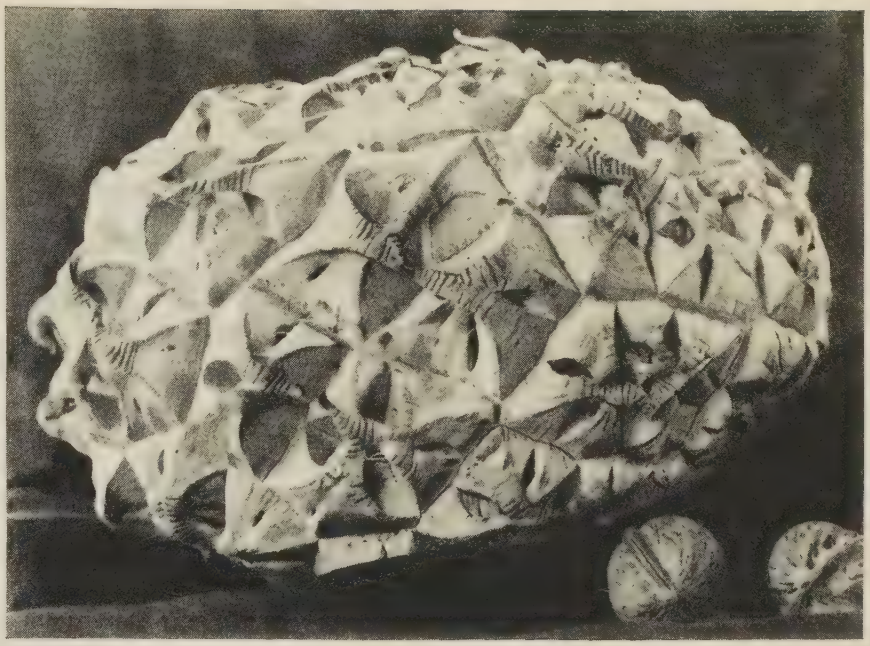
A LARGE SPECIMEN AT THE RIGHT
Calvatia sculpta found by Col. White, Superintendent of Sequoia and General Grant National Parks. Note the breaking up of the outer coat; also, for comparison, the sequoia cone at the right is about the size of a walnut

Parks, California's playgrounds.

These puffballs vary much in shape and in the manner of their growth. Sometimes they sit flatly on the ground, when they are said to be sessile. Others have more or less elongated bases, on which the spines are not as well developed.

No one seems to understand just how these pyramids with the regular markings on their sides are formed. Some of these puffballs have been found with spines fully developed underground. In other cases they may occur singly, in small colonies or growing closely crowded.

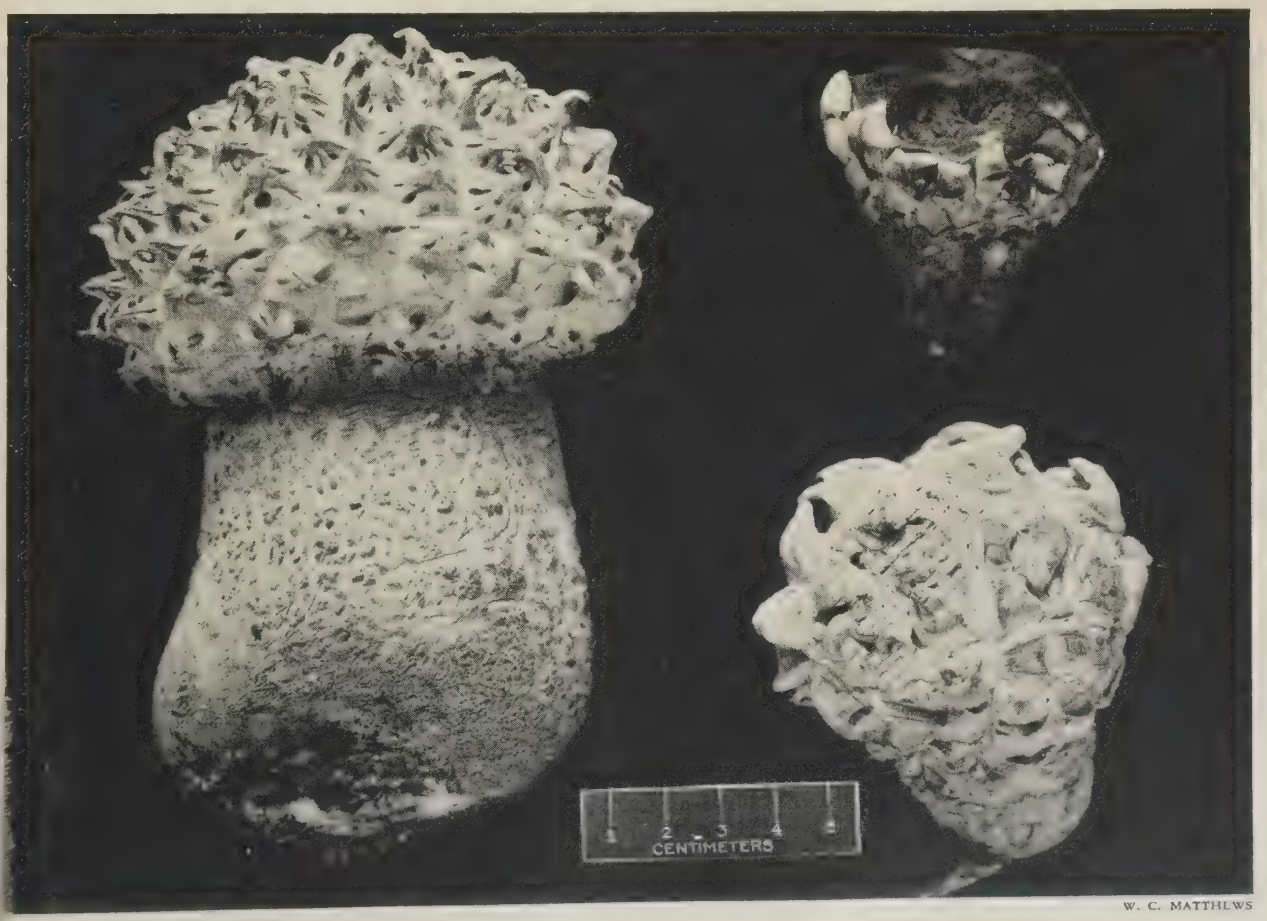
How the wonderful peridium of the spiny puffball is formed must be a matter of conjecture, and one guess is perhaps as good as another. It seems plausible that during the active growing state the plant continues to produce layers in the outside covering successively. As the puffball increases in size, pressure may come from within on radial lines, causing a cracking into pyramidal sections. The ridges on the sides might be accounted for by the difference in temperature between night and day, and the effect of this on the rate of water loss from these exposed spines. During the cool nights in the mountains drying takes place more slowly, while during the day the sun's rays cause a more rapid shrinking. Hence the irregular lines on the sides of the pyramids record the days of the puffball's active growth.



H. E. ROBERTS

A NOTABLE SPECIMEN OF SCULPTA COMPARED WITH TWO WALNUTS

And, below, interesting examples of the species, showing exceptionally elongated and developed base (left); two top-shaped plants (upper) with peridium cracked off and showing the dark, ripe mass of spores. Lower is a larger but a younger specimen



W. C. MATTHEWS

BLOOMS OF NEWFOUNDLAND

BY M. SOUTHCOTT

PHOTOGRAPHS BY THE AUTHOR

MOST ADMIRED BY VISITORS

The purple iris is a favorite among blooms

Although announced only as a tentative trip among the 1931 American Nature Association field trips, the one to Gaspe and Newfoundland has stimulated unexpected interest. Possibly this article suggests one of the reasons. If any more of our readers are interested in this trip we shall be glad to send them the itinerary and details.

WITHIN 1200 miles of New York, and but a forty-eight-hour sail from Montreal, lies an island that is still virgin ground. Its beautiful rivers are unpolluted, its broad forests are mainly unscarred by the axe. Its bountiful wild life and flora have not yet suffered from too much civilization, and the shores of its myriad lakes are mainly in their primitive state. Rising fiord-like from the silver fingers of the bays that reach possessively into this land are the picturesque hills, brown, and rugged, creating a quality of beauty like that of Scandinavian lands, whose majestic and rugged beauty is well known.

This island is Newfoundland, oldest of British colonies, influenced by both the Labrador and the Gulf Stream currents, fought over for its rich fishing grounds by four nations, and, in recent years, the spot from which many adventurous heroes of the air have winged their way toward Europe. Although popularly considered to be a cold, bitter land, it is least of all this. The temperature rarely descends to zero in winter, and although it seldom rises above 80 degrees, it is always pleasantly invigorating. Open fireplaces suffice to warm the little wooden hillside cottages the year round.

ONE OF THE RARE FORMS

Arethusa is a handsome orchid which finds its northern limit in Newfoundland

The spring, however, is the time that Newfoundland most fully reveals its beauty through the medium of its infinite variety of flowers. Then the fields and woods and hillsides, as if shaking off the repressions of winter in one grand spree of color and fragrance, burst into bloom. So intense and exuberant is this flower display that one feels it cannot last out the spring—but it does, and extends far into the summer, carried on by new blooms that constantly appear. And it does not fade until the woods are turning brown with the fall and the berries and fruits gleam from the bushes.

Among the first of the plants to peep forth in answer to the warming rays of the sun are the tiny white violets that select the moist places along the country roadsides for their blooming. Later, the larger purple violets show themselves more conspicuously. The violets, however, are apt to be passed unnoticed when the purple *Rhodora canadensis* covers the land. Its gay flowers appear in May, even before the leaves, and shine from the bare brown stems with laughing impudence. At almost the same time, on the dry margins of swamps and on the gravelly ridges, appears the sheep laurel, with its circlet of bright pink blossoms growing a little below the leafy summit of the stems. In the boggy swamps, less conspicuous and more delicate, the pale swamp laurel lifts its terminal umbels. Both are evergreens, and have lent their mite of welcome verdure to the winter landscape. The cup-shaped blossoms, with their ten depressions, each bearing a stamen, are among the most beautiful of all the blooms that lend their grace to Newfoundland's spring.

In the damp places along the edges of lakes and rivers the sturdy Labrador tea, *Ledum groenlandicum,* sends forth its bunches of white flowers, to mingle with its evergreen leaves, leather-like above, and rusty-woolly beneath, and beckons in the wind toward the water-loving lobelia, whose light-blue blooms, standing upright on almost leafless stems, rival the sky and the clear waters in their coloring. Both these plants must bow to the purple iris, however, as queen of popular favor in Newfoundland.

THE LABRADOR TEA

Why real tea could not be made from its leather-like leaves was a childhood mystery

A COMMON BLOOM

The bunch-berry, with its circle of tiny flowers that later develop into bright red berries

It, too, selects the damp margins of ponds and swamps for its home. Locally, it has rather a bad name, being called "poison flower," and children are warned not to pick it because of its acrid juice.

Many to whom the word orchid suggests tropical climes and hothouses may be surprised to learn that Newfoundland boasts of many varieties. The old favorite of the woodland, the pink ladyslipper, *Cypripedium acaule*, is fairly common, and *Calopogon* (or *Limodorum*) and *Arethusa*, rather rare forms, but known to many who search the treasures of New England meadows, are among the more beautiful frequenting this island. The northern green orchid, *Habenaria hyperborea*, denizen of the cold, wet woods, whose dense, narrow flower-spike sometimes grows to be 12 inches long, is plentiful, and that lover of moist earth, *Gyrostachys*, known as the "scent bottle," may be found in almost every damp spot. *Pogonia ophioglossoides*, or snake mouth, with its solitary, raspberry-scented crimson-pink flowers and its small, light-green lance-shaped leaf placed half-way up the stem, and the purple-fringed orchid, *Habenaria psycodes*, with blooms four to ten inches in length that may be discovered in the wet meadows and bogs, are other members of this, the most aristocratic of all flower families.

A WOODLAND DENIZEN

The white-fringed orchid is one of the most aristocratic of Newfoundland flowers

One of the most curious of all Newfoundland plants is the little sundew, *Drosera rotundifolia*, whose white blooms enliven the woods in July and August. It is one of the carnivorous plants, the leaves of which are covered with little red hairs each tipped with a drop resembling dew. When these hairs are excited by an insect alighting on the leaves, they slowly bend, and the insect is rolled to the centre, where it soon dies. If an inorganic body, such as a stone, which it cannot digest and is therefore of no use, is placed on the leaf, the tentacles respond and close over it, but the plant soon discovers its mistake and they open again. When the tentacles have captured a victim, the secretion in which it dies becomes acid, digesting the body much as the gastric juices of humans do. This plant has a rival as an insect catcher, however—the well known pitcher plant, *Sarracenia purpurea*, which uses a sweet liquid to lure its prospective meat dishes. When the unsuspecting creatures venture into the cup to sip the nectar, they slip from the smooth wall and are drowned in the very potion they meant to quaff. Such is the treachery of this self-seeking plant.

Under the spruce and fir trees that blanket the valleys the saprophytic Indian pipe, *Monotropa uniflora*, stakes out its claim, sending its deathly-white flowers out to peer above the cover of the woodland floor. No such easy sort of life is chosen, however, by the delicate harebell. It braves the winds on the highest slopes, and picks a crevice in the rocky cliffs for its bright blue flowers, and the bumble-bee, cherishing its ambrosia, helps it to survive.

When the spring flowers have passed, and the summer sun has ripened the grains in the field and brought all plant life to fruition, then comes the goldenrod, the flower of Autumn, and Newfoundland glows with its yellow splendor. This is the time for the berries—the whortleberries or blueberries, the few-flowered viburnum or squash berry, that thrives on the hillsides, the red currants, and the gooseberries. The delicious strawberries, the taste of which no cultivated plant can hope to equal, and the luscious wild raspberries, have usually passed when the goldenrod puts on its nodding plume, but the low shrubby cranberry, locally called partridge berry, frequenter of the bleak exposed slopes, is just in its prime. This plant is fertilized by the wind and grows where the gusty sower may have full sweep. Many

hundreds of barrels of its berries are exported yearly. A first cousin to the Nova Scotia cranberry, the marshberry, *Vaccinium oxycoccus,* grows in the marshes, side by side with the bakeapple, *Rubus chamaemorus,* a delicious breakfast fruit which is preceded by a single white blossom standing erect at the top of the stalk. This berry is amber colored, and is tightly clasped by its green leaves. Another fruit that becomes a tasty preserve under the housewife's magic is the snow-berry, here called the capillaire berry, found also in cool swamps farther south. The tiny stems of this plant creep along the ground under the fir trees and must be lifted up to disclose the white berries underneath. In every wood under the trees may be found, also, the bright red berries of the bunchberry, *Cornus canadensis,* here called the crackerberry, dwarfed cousin of the flowering dogwood, and the grayish berries of the *Smilacina,* which have taken the place of the bright blooms of early summer. These lend their charming bits of color to the autumn landscape.

Hundreds of ferns fill the mossy glens and moist brooksides in the interior of Newfoundland. The sensitive fern, *Onoclea,* the royal fern, *Osmunda regalis, Osmunda cinnamomea,* with its fertile spikes of rusty brown, the tall bracken, the delicate lady fern, and numerous other varieties people the woodlands, waiting for Nature lovers to exclaim over their luxuriance. The graceful horsetails, children of the great trees of the Carboniferous age, which left its mark in coal seams in St. George's Bay and on the Middle Barachois and Robinson's Brook, are everywhere, and the mosses—the staghorn, the sphagnum and many others, principally the lichens, the fungi and the seaweeds, take their accustomed places in different parts of this land, offering a wide field of interest to the observer.

Newfoundland, like Alaska, suffers from legends that have prevented its beauty from being discovered. It is known as a fisherman's paradise, but too few realize that it is also a Nature lover's paradise, rich in flowers, abundant in animal life and picturesque in its rugged wildness. Each year an additional few straggle back to the United States with tales of its charm. Perhaps, some day, its full worth for vacations will be understood.

FAR FROM THE USUAL HAUNTS
High on the rocks that composed an island in a Nova Scotian lake was the barn swallow's nest

THE SWALLOW'S NEST

BY CAROLYN SHELDON

In a cosy niche of a rock that hung above a lake nestling deep in a Nova Scotia forest, rested the exquisite structure of a barn-swallow's nest. Black wood and earth formed its foundation. The outside was green with fresh moss from the ground, and bits of fine gray lichen from the trees had been woven in and out. Loveliest of all was its thick warm lining of gull's breast-feathers, all pure white,—most of them probably gathered on top of the rocks, nearby, where these birds were breeding. The soft feathers curled up over the edge, making a downy crown. The gentle, bright-eyed mother bird sat motionless on this throne, covering three speckled eggs. Above her, the other parent circled gracefully, his glossy blue back shining in the sun, and his tail, with its slender fork, spread out.

Barn-swallows derive their name from the places where their nests are now so commonly seen, about the structures of men; but this pair had chosen a sheltered nook far more beautiful, and similar to those its kind once used before white men came to provide securer shelter. But who would expect to find a barn-swallow's nest on a rock-studded island in the midst of a wilderness lake?

CACTUS JUICE USED TO SETTLE THE INCREDIBLY MUDDY RIVER WATER

MR. EDDY (RIGHT) DISCUSSES THINGS WITH PARLEY GALLOWAY, RIVERMAN

DANGEROUS RIVERS

THEY ARE CLYDE EDDY'S HOBBY

BY MARGARET WHITTEMORE

CLYDE EDDY is the manager of the retail research department of E. R. Squibb and Sons in New York, but his hobby is exploring dangerous rivers. Ever since he can remember, he says, he has had an ambition to navigate rough streams. As a boy he would watch the mountain torrents plunging over their rocky beds and pick out the channels through which a boat might find its way. Swift streams have always fascinated him, and "white water" rivers swept gloriously through his childhood dreams.

Many years ago, while living in a small mining town in Colorado, one of his chums was Lowell Thomas, who has since distinguished himself as an explorer. The boys heard tales of rough-and-ready adventure from the miners with whom they mingled, and caught the urge to visit new scenes and venture into unexplored wildernesses. At the age of eighteen, Clyde Eddy set forth on foot by himself

WHERE THE WATERS TUMBLE THROUGH CATARACT CANYON

Mr. Eddy was called upon to aid the Pathé-Bray Expedition reported lost on the riotous Colorado

over the mountains and deserts to Salt Lake City, five hundred miles away.

A few years later he attended the University of California, graduating from the College of Pharmacy in 1912. In 1914 he completed two years of extension work in geology at Columbia University. Then he enlisted in the army, serving in the Photographic Division of the Signal Corps. When he left the army in 1919, he stopped over at the Grand Canyon with his wife on the way to their California home. As they gazed at the raging torrent below, he turned to her and said, "There is my river!"

Eight more years passed while he dreamed his dreams and made his plans. He learned what he could of the river from published reports of Major Powell's explorations and of the few other successful journeys that have been made down the river. He gave much thought to stores and equipment, and although he had never been on the river with a boat, he finally decided that he had a list of everything needed to make a successful voyage through the canyons.

In the spring of 1927 he enlisted an adventurous crew of eleven college students to go with him. These were selected from more than one hundred volunteers. To this group were added an expert riverman, who, however, had never been through much of the Grand Canyon; a news-reel camera man; and a wandering soldier of fortune, who claimed to have gone through the rapids of the Euphrates and the Yukon. Mr. Eddy, curious as to how his actions and reactions would compare with those of the college boys, yielded to his plea to be taken along. And, as events turned out, the college boys proved hardier, more courageous and mentally more alert than the seasoned veteran of adventure.

Although the trip down the Colorado was undertaken in the spirit of adventure, it could hardly be called a pleasure jaunt. There were many moments during that journey when boats and men were merely toys in the maw of the furious waters. They faced death daily in the high and dangerous river, fighting their way through nearly six hundred rapids. They lost one of their boats and many other effects, but came through in triumph. When they stepped ashore at Needles, they had the gratification of knowing that they had made the journey in less time than any previous expedition—758 miles in 43 days; that they had been the first to make the trip at high water, and that the motion pictures and other records they had made of the trip were the best ever made of this thrilling and wildly beautiful portion of the Colorado River.

Later in that year, Mr. Eddy was called out of the river to aid in the rescue of the Pathé-Bray expedition, reported lost in Cataract Canyon, and he remained to assist the party through 125 miles of the Grand Canyon, from Lee's Ferry to Bright Angel Creek, where the winter expedition was abandoned. Now, with the thrill of his Colorado River experiences still tingling in his veins, he is engaged in planning a bigger and even more thrilling expedition down the Nile, which has never been explored from its source to its mouth. More thrills are in store.

A CATERPILLAR'S ADVENTURE

BY L. D. WHITE

THERE are things one comes upon, commonplace enough, perhaps, but they are a part of the vision revealed through the very nature of things.

I sat on the parapet of a highway bridge, one hot summer afternoon. The automobiles were rushing up one side and down the other. I saw a little black fluffy thing that had, virtually, stepped off the pavement and stood waiting his chance to begin his perilous journey across that roadway. When an opening presented itself he seemed fairly to fly, even though he made little headway. Then he rolled up into a little black ball as a big rubber wheel came whizzing past.

I looked more closely. It was just a black caterpillar, stretching its length ready for another lap. He was determined to cross that roadway. He would stop-look-listen, then hurry to a new safety zone; another stop-look-listen attitude, then another dash for a safety zone, while the big wheels went perilously near. Then, again, a little black ball, and once more a wheel passed almost too near to miss. He straightened and seemed to look around on man and the world, but drew back quickly as another wheel swept by.

I sat and watched with bated breath. Would he make it? Then another black ball, untouched by the traffic, and his goal!

So come hazards even to the lowliest. Man, ever changing his little earth, goes on his relentless way. Some of his works help other creatures, from the moth on his cabbage patch to the robin in the shrubbery he has planted. But the caterpillar, happily, senses only the joys and dangers of moments such as had this one.

WHERE NIGHTHAWKS CHOOSE TO ROOST

They squat on the ground when disturbed, but normally pick fence posts for daytime duty

NIGHTHAWKS ON THE PRAIRIE

THE BIRDS THAT HELP KEEP DOWN THE INSECT MENACE

BY LEWIS W. WALKER

THE "GOATSUCKER"

The ample mouth is the basis for the exploded myth

EARLY in June, as darkness approaches and the lamps are giving off their cheery light, a soft and continual tapping may be noticed on the windows and screens of homes on the prairie. Strangers to the region think it to be rain, others wind, but the ranchers, the inhabitants who understand, know it to be the pest of the prairie, the miller. An almost countless number of this small moth spend the day in barns, under clapboards, or in rubbish heaps. At dusk the army emerges to hunt what seems to be its life's desire, a light. If the creatures do get through the windows and screens, it usually means death. They do not seem satisfied to burn a leg or an antenna; instead they cast themselves time after time at the blazing lure, until finally they lie still, wisps of smoke rising from their lifeless bodies.

Many of those which do not succeed in entering the house usually meet another fate, not by fire, but as food for the alert nighthawk.

Many years ago people credited the nighthawk and the whippoorwill with the power of sucking goats. They believed this myth so implicitly that they called the family the goatsuckers, mainly because of the extremely large, wide-spreading mouth with which the nighthawk and its relatives are endowed. They did not bother to open up a dead bird and find a hundred or more mosquitoes, forty or fifty millers and perhaps a few beetles in its crop. If they had, fewer nighthawks would have died and their beneficial habits would have been realized and appreciated.

The insects are caught while on the wing, and are never taken from the ground, as is the custom of many of the other birds. An hour or so after dusk a deep zooming sound may be heard over the prairie. A moment or so later there is sounded from high in the air a sharp, stifled "peent" and you know the nighthawk is entertaining his mate on the nest.

The zooming noise is produced by the birds dropping through the air at great speed, then spreading their wings suddenly just before the ground is hit. The long primaries vibrate rapidly and produce the noise. Rising again, the birds give their peculiar call, almost as a boast for having so narrowly escaped the earth.

Their nest, if it can be dignified by such a name, is a hollow on the ground, and eggs resembling pebbles are laid within. It is one of the best-hidden of all nests, and is undiscoverable without the aid of the parent bird. Unlike most ground-living birds, the female does not run over the ground when disturbed from the nest, but instead rises directly into the air, thus betraying the precious secret of the nest's location.

When the young birds are almost fully fledged, and one comes upon them suddenly, they first try to hide by squatting on the ground, depending on their color as their protection.

NEAR THE CRUDE NEST

The home is on the ground, and the mother, disturbed, flies directly from the eggs

SEA KINGS OF THE AIR

THEIR MAJESTY AND GRACE MADE THEM FAMOUS

BY TOM IREDALE

PHOTOGRAPHS BY E. F. POLLOCK

BLACK-BROWED ALBATROSS IN GRACEFUL FLIGHT

These are smaller birds than the snowy albatross, and may be distinguished by the dark band on the back. Both inhabit the frozen Antarctic

TRUE MOLLYMOCK MANEUVER, PROCLAIMING THE BIRD

The mollymock, or black-browed variety, travels with wings slightly bent, while the snowy albatross keeps his as straight as an airplane's wings

When Solomon recorded the fact that one of the mysteries he, the wisest man the world had ever known, was unable to fathom, was the way of an eagle in the air, he only anticipated the conclusion of many would-be wise men when they met with the albatross, a bird unknown to Solomon.

As an inhabitant of the southern seas, the albatross was discovered in comparatively recent years, probably in the concluding years of the fifteenth century. It soon after became well known, and has proved to be the largest sea bird now existing, and is considered to be the basis of the mythical roc tradition which extends far into the past.

As all vessels were, in those days, sailing ships and subject to long stoppages through lack of wind, the superstitious sailors had plenty of time to observe these birds, and came to give them the sanctity so well exemplified in the sympathetic poem:

"The ice was here, the ice was there,
The ice was all around:
It cracked and growled, and roared and howled;
Like noises in a swound!

At length did cross an albatross,
Through the fog it came;
As if it had been a Christian soul,
We hailed it in God's name.

It ate the food it ne'er had eat,
And round and round it flew,
The ice did split with a thunder-fit;
The helmsman steered us through!"

Coleridge's poem was written soon after the discovery by Cook of the southern frozen seas, and is particularly interesting to Nature students because it notices both the flight and the food of the giant bird.

Sweeping round and round with

Few birds have been as famous in literature and legend, and yet as little scientifically studied, as the albatross. Thus this authoritative article and its excellent illustrations serve to throw new light on the creature Coleridge made immortal

apparently effortless ease albatrosses are objects of wonder to every voyager in the southern seas, and now in the days of steam have become numerous, sailing in the wake of the vessels to "eat the food they ne'er had eat."

Encircling apparently without wing flapping these huge birds entrance the senses with their wondrous grace. Their majesty suggests disdain of mundane troubles. Closer observation, however, reveals the gleam of eyes of quickest intelligence, tensely alert upon the chance of spoil from the travelling monster. Great circles are girdled and the human eye almost misses the quiver of the wing as it slowly flaps to regain momentum for another swoop.

From morn to eve these birds pursue their endless flight and probably keep on all through the dark night, for when the dawn breaks their shadowy forms may be darkly discerned, still continuing as if they, and not the Ancient Mariner, were possessed of plaguing fiends.

Their majestic sway is only dispelled by the sight of a scrap of food. Immediately the graceful aviators fall in ungainly fashion towards the water, and a screaming, struggling, scuffling set of demons dispute the often distasteful morsel. It is truly a descent to bathos. One moment the birds are supreme, disdainful and full of grace; the next lowly, greedy, and ungainly.

"And a good south wind sprung up behind
The albatross did follow;
And every day, for food or play,
Came to the mariners' hollo.

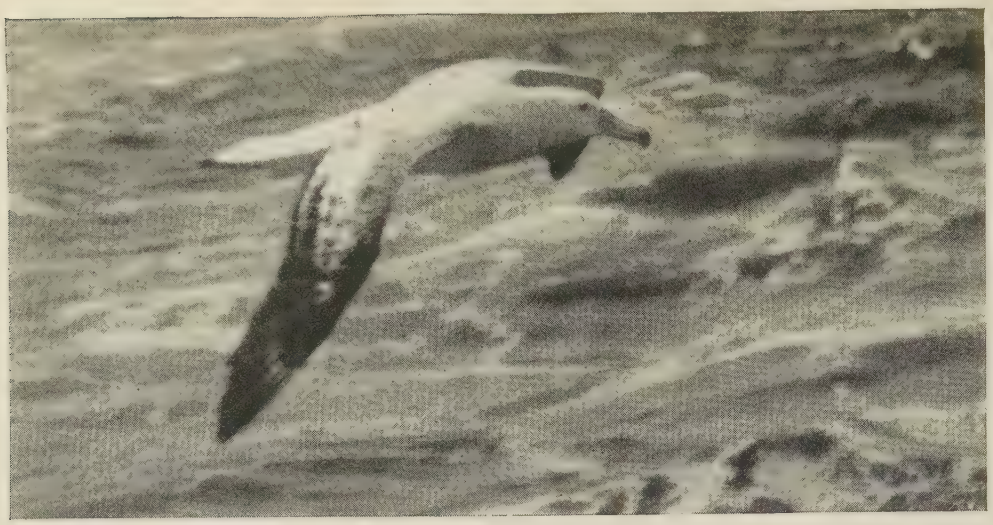
In mist or cloud, on mast or shroud
It perched for vespers nine;
Whiles all the night, through fogsmoke white
Glimmered the white moonshine."

THE SNOWY ALBATROSS CLEAVES THE BLUE

Famous in song and story, the great bird, with a wing spread of fourteen feet, still maintains his prestige among the icefloes of the southland

ONE OF THE PETRELS OR "WATER WALKERS", SO-CALLED

The petrels are members of the tube-nosed family named for Peter because of their apparent ability to stride over the waves. A sea king indeed



A SYMBOL OF SPEED OVER THE WAVES

The lordly albatross, with scarcely a wing tremor, seems to glide above the waters with incredible rapidity, with never an ungraceful movement

The poet in the second stanza confused two very different birds. The albatross never perches either on mast or shroud; it settles only on the water. The gannet, a somewhat similar looking bird, has however the habit of perching upon ships' masts.

"God save thee, ancient mariner!
From the fiends that plague thee thus!
Why look'st thou so? With my cross-bow
I shot the albatross.

BANKING FOR A TURN

A front view of the great antarctic bird that Coleridge immortalized

And I had done a hellish thing,
And it would work 'em woe:
For all averred, I had kill the bird
That made the breeze to blow."

There again a little poetical license seems apparent as no cross-bows were carried in the sailing vessels that met with albatrosses. To this day, however, among English-speaking sailors it is regarded unwise to shoot the albatross. Unfortunately this view is not held by all sailors.

The evolution of these giants of the air is wrapped in mystery, as there are no connecting links left to guide us to their origin. Although associated with other web-footed swimming birds that have their nostrils elongated into tubes they differ widely even in this item from their suggested allies. While it is true that they possess tubular nostrils, the tubes are separated and placed on each side of the bill. All others have tubes that are contiguous and placed on the top of the bill. In size the albatrosses are approached by only one of these other petrels, as the tube-nosed swimming birds are called. It is a far cry from the minute, wave-skipping fairies to which were given the original name, *Peterel,* (i. e. little Peter, because of their apparent ability to walk on the sea as did the Saint) to these huge birds who rarely descend to the sea surface and whose efforts to rise are marked by immense footsteps. Moreover, the largest petrel does not swoop or sway in the magnificent manner of the albatross, and is more bulky and meaner looking as well.

There are many queries in connection with the present distribution of these avian kings. Though they generally lord it over the icy wastes of the antarctic seas, rarely travelling into temperate climate and still more rarely venturing into the tropics, a colony exists in the northern Pacific. At some distant date some ancestors must have passed the torrid zone and founded a kingdom in exile. This small settlement does not call for the same sympathy as do the southern ice kings, but needs greater assistance as it is in danger of extermination through isolation. Such a kingly bird deserves the greatest protection, as a wonderful relic of past ages. Perhaps isolation has brought about the differentiation seen among the southern forms where two series, a large and a small, may be separated.

The word albatross is regarded as a corruption of *Alcatraz,* a name given to a pelican or other big bird by the peoples of southern Europe. This seems a very likely solution. While this article was being written a friend reported that a magnificent snowy albatross had been seen and at first was mistaken in the distance for a pelican! The large series still retains the name albatross among all sailormen even in these days of steamer travel. The smaller series, however, are keenly distinguished by the same sailors as mollyhawks or mollymawks and it is an insult to credit these with being albatrosses. The name mollymawk is a similar corruption from the north European *Mallemücke,* or "large sea gull." Mollymawks can always be identified by their size and by the fact that the dark

color of the wings extends across the back, while in the albatrosses the back is wholly white. As will be seen in the accompanying photographs their flight is also different. The albatross keeps its wings more outspread while the smaller birds show a distinct bend in theirs.

While much could be written about the varying theories of their continuous swirling flight it is now concluded that they gather momentum by a downward sweep that carries them by means of control of the wind currents in the huge compass they make. The calmest day shows them swinging and circling just as in the strongest wind, though here again close observation would show a difference in the size of the sweeps and also probably in the height of the flight above the sea's surface. The majesty of the snow king, the snowy albatross, is enhanced by the distance he keeps. He generally flies high.

Recently the sanctuary of the busy harbor has attracted this magnificent bird and it can be viewed at close range. The great span of the wings, upward of fourteen feet, can now, at close range, be very much better realized.

The breeding habits of these fine birds are really worthy of extensive study. They resort to small islets scattered just outside the antarctic circle and build large open nests upon the ground in colonies. They lay only one egg, and, owing to the inaccessibility of these islets, the exact time of incubation has not been determined. It is now admitted, however, that the young bird stays in the nest for the space of time between one breeding time and another,—that is, for about nine months. How many years elapse before the young bird becomes adult is also not yet known. All these facts show that these grand birds need all the protection that can be given.

It is not amiss to recall, in this connection, that one of the most famous conservation passages in literature was written about the albatross:

> "He prayeth well who loveth well
> Both man and bird and beast. . . .
> He prayeth best who loveth best
> All things both great and small."

THE MIGRANT REDSTART

BY EDWARD A. PREBLE

HE WAS a young redstart, that fairy-like creature flitting among the russeting leaves of the beech before my window on that bright cool morning of early autumn. The rays of the sun, low-slanted, were welcome, for the night had been cold, and he played most in the spots where lay its warmth, though busy with his breakfast. For as he snapped up tiny fluttering moth or buzzing fly, he must still dance, sidling along the spray, displaying by his shuttling the yellow spots on his broad fan-shaped tail, just as next spring he would strut before his mate.

The faint salmon tinge on his breast proclaimed his sex and that his life had been brief. A few weeks earlier on the Labrador coast he flew from the warm, deep-cupped cradle on an aspen branch. No voice told him that he must seek a milder clime ere Keewadin, with his frigid breath, should chill insect and flower. Still in some way the knowledge had come, and he had fared bravely southward. A few days' flight, buoyed up on those feeble wings, and already he is on the Potomac. Yesterday, perhaps, he dined amid the searing alders on the banks of the Mohawk; tomorrow, mayhap, he will breakfast on the Rappahannock. Next week, who knows, he may say farewell to the Atchafalaya, and launch out on that dread flight across the Gulf to Yucatan.

What secret strength has put into that fragment of flesh and feathers the wit that guides him along the unpathed trail? A helpless bird, yet the unconquerable spirit of a crusader seems weak by comparison. Shall not the faith of this pigmy traveler give us courage for our own journey? Can we doubt that the power that traces the pathway of this brave bird may be trusted to guide us along our appointed road in this world?

UNO BIRDIE BUNS FOR BABY
WHAT'S THE OBJECTION? ARE N'T THE SIGNS PRETTY ENOUGH? WHAT'S THE MATTER WITH 'EM?
LOTS
REAL ESTA
Herbert Johnson

ACQUIRING BEAUTY BY LAW

BY
ROBBINS B. STOECKEL

MR. STOECKEL IS COMMISSIONER OF MOTOR VEHICLES FOR THE STATE OF CONNECTICUT

CARTOONS BY HERBERT JOHNSON

A HESITANT freshman was attempting to describe the wonders of Nature.

"Grass is green," he said.

"The greenness is in you, young man, not in the grass," his teacher retorted.

The professor's acerbity was pertinent, perhaps, and certainly, there is much of truth in his statement. When one declares that some object is beautiful, one is attempting to describe his concept of the object. Beauty exists in him who sees it, and the sheen of the green will vary with each observer.

Some objects, natural or otherwise, appeal more than others to the sense of beauty of a large number of persons. It is the incontestable privilege of every individual to decide for himself as to what is beautiful and what is not. Somewhere in this world of variable natures it is possible, probably, to find persons who see beauty in wayside advertising. But these must be few in number, for experience teaches that the vast majority get more pleasure from admiring the waysides unadorned.

Enough people feel strongly about this particular matter to create a sentiment which will really accomplish something towards the imposition of this will of a great majority upon the few. In short, the time has come to abolish wayside advertising. We now have the question: How to do it?

It is obvious, that, failing a complete change of heart in the advertisers, it must be done by law. Such a change of heart might be induced by economic pressure. In fact, if advertisers had the statistics of sales success due to wayside signs, it is doubtful whether they would persist in this form of approach to the buyer. Many Nature lovers, not aggressive enough to be heard from in complaint, do, nevertheless, take their resentment out in refusal to buy products so advertised. If all garden clubs, outdoor organizations and housewives' leagues in the country should adopt a policy of refusal to buy wares so advertised, there is no doubt of the immediate result.

Through the Roadside Bulletin and the surveys of roadside conditions in several states, the American Nature Association is actively working for the return of our American countryside to a state of beauty. In the accompanying article Mr. R. B. Stoeckel sets forth problems of interest to every beauty-loving American.

Perhaps such a general movement is too much to hope for, and so, most likely, any immediate improvement must be brought about by law. The great bugagoo about a law which is of the nature needed for this purpose is that it may be unconstitutional. In order not to deprive an owner of his constitutional rights, such a law must not be confiscatory. The theory upon which a sound law must be built is

A RURAL LANDSCAPE OF UNSPOILED BEAUTY OR . . .

A hillside at a curve bespattered with this excresence of commercialism which belongs elsewhere

A LOCATION THAT IS A MENACE

Such a billboard should and can be prohibited by proper law

that of reasonable regulation. So much management, at least over the property of the individual, can be exercised in pursuance of the police powers set forth in constitutions. Some measure of success has already been attained by the various types of attempted regulation by law. These are met with in various parts of our country, but they are still incomplete and in a state of experiment.

In some States highway departments have been given full jurisdictional authority over all structures within the limits of the right of way. This is necessary and logical. A highway department has duties to direct and warn the traveling public. A broad law which confers power over all structures is reasonable. Wherever such a law has been enacted it has been the department's first move to clear its rights of way of all signs but its own. This elimination is a great safety accomplishment. Highway direction of travelers and warnings of danger are interfered with by any such cluttering up as that contributed by thousands of little advertising signs. The first step, always, and one which will forthwith drive wayside advertising out of its front entrenchments, must be to get this sound legislation for each State Highway Department. When this is secured there can be no question as to the fate of those signs which are within the right of way. They can and will be destroyed at once by the State.

Driven from its front lines advertising will then move back upon private property, and immediately a new difficulty will be presented. The original method of attack on this problem of signs on private property was taxation, the theory being that signs could be taxed out of existence. Some of our States have tried it. The tax, at first is usually low, then higher and higher, until in theory it is large enough to prohibit the

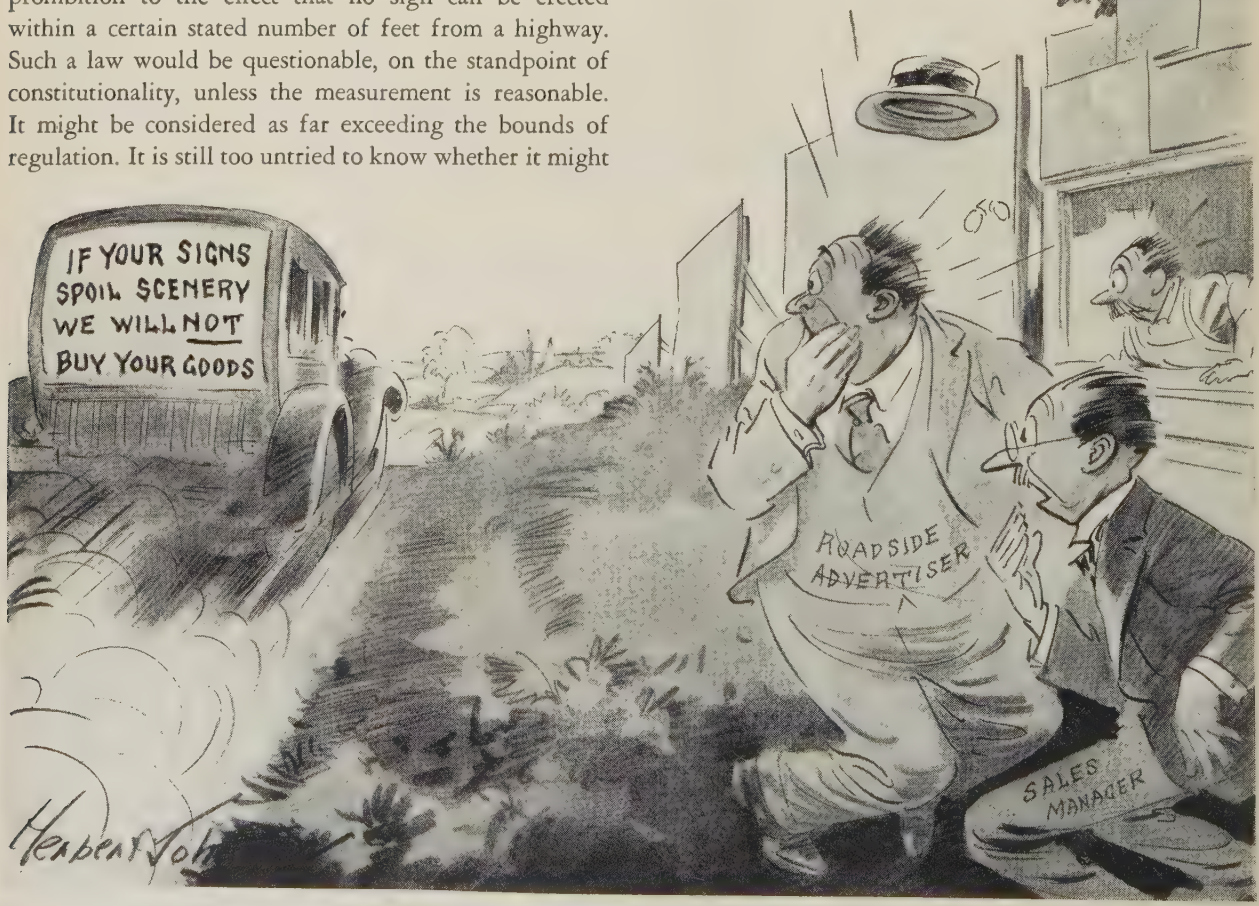
AND THERE ARE THOSE WHO CALL THIS UNOBJECTIONABLE

A common scene along thousands of miles of the highways that Americans have built at great expense through taxation

placing of billboards and signs. The procedure has been adequate to some extent. It has abolished many of the small signs of advertisers of small means. However, it has left the great groups of signs set up by industries which are rich enough to flaunt their names in the eyes of the public. Such signs have not been abolished, and they never will be under any such plan as taxation. Fundamentally, taxation is wrong as a means to abolish signs, for the plan makes it legal to maintain signs, instead of making it illegal. Taxation will not in itself ever accomplish the desired final disposition of signs.

The line of attack most obvious and direct, and which should eventually be successful, is to make a law of prohibition to the effect that no sign can be erected within a certain stated number of feet from a highway. Such a law would be questionable, on the standpoint of constitutionality, unless the measurement is reasonable. It might be considered as far exceeding the bounds of regulation. It is still too untried to know whether it might be upset by legal process in the state and federal courts.

In connection with constitutionality, a broad question arises. It must be true that no such great determination as to whether a law is constitutional or not can be absolutely decided upon the precedents of ancient times. It must be necessary, now, to take into account newer and more advanced civilizations and to define reasonable regulation in more liberal terms. A law, which might have been discard-



ed under the conditions of some years ago as unconstitutional, might now be saved by bringing it within the powers of a state as a necessary regulatory provision. The fate of such laws will be watched with great interest in the immediate future, and when the principle is held constitutional by a high court, then the problem will be solved and advertising signs can be abolished. Until the happy day when the general use of such a law arrives, there are one or two methods by which some signs, at least, can be abolished without much danger of an upset in court. In drafting a law, the important point is to make certain that it is surrounded, so far as it may be, by reasonable provisions. For example, a law which prohibits advertising signs in front of a line five hundred feet from the highway will not survive judicial action, if the distance is obviously unreasonable.

The fact that four-fifths of all motor vehicle accidents are due to mistakes on the part of an operator opens a new possibility in connection with "inattention" and "distraction" of the operator as causes of accidents. It has long been a recognized principle that where a wayside or advertising sign obstructs the sight line of the operator, a State may, in the exercise of its police powers, cause that sign to be removed. On many occasions, such signs have been taken down after a simple statement of facts and a request made by state authorities. This principle is established. It therefore follows that in consequence of its application many places otherwise desirable for advertising purposes are not available. This has forced the placing of signs in particular locations on highways because they have needed to be placed where they do not interfere with the sight line.

It is obvious that there enters into the plan of wayside advertising, in order that the advertiser may receive the most good from his effort, the necessity for him to so place his sign that everybody will see it. There appears to be no better place on a highway, from the advertiser's point of view, than opposite the center of a curve. This is the point where an automobile operator is called upon for the most care, and it is the particular place on a curve where most accidents happen. If then, an operator sees a sign, and rarely can he avoid it, and is distracted by it, the sign certainly constitutes a wayside hazard, and if it is a hazard it can be abolished. To put it more simply, every operator of a car needs to concentrate on his driving when he is going around a curve and if a sign, by reason of its attractiveness, its unique appearance, its lighting effects or any other feature, distracts his attention from his driving it is a menace. It provides a distraction and thus a cause of danger, and as such should and can be removed.

We have indicated how a future attempt may be made to extend the broad principles of sight line clearance and to try to reduce the number of advertising signs which are so placed as to cause distraction in especially dangerous places. The adoption of this means of attack upon advertising signs, on the ground of safety, might lead to the adoption of regulations and ordinances by towns. There probably is no question, from the standpoint of constitutional law, as to the practicability of regulation of signs under the same principle by which building lines are now established and regulated. If this is so, and an attempt is made to so regulate, probably the resulting legislation, so far as a state is concerned, will be in broad terms to the effect that no object whatever which distracts attention from the operation of a motor vehicle may be placed within a definite, reasonable distance, stated in the law, from the side limits of the highway.

Still another feasible method is by making zoning laws. Possibly this is the best of all in the sense of soundness as a legal principle, even though it is cumbersome and imperfect as machinery. Because of its being a local self-government measure, uniform and widespread adaptation will be exceedingly slow to develope.

THE HORSE OF GREEN LAKE

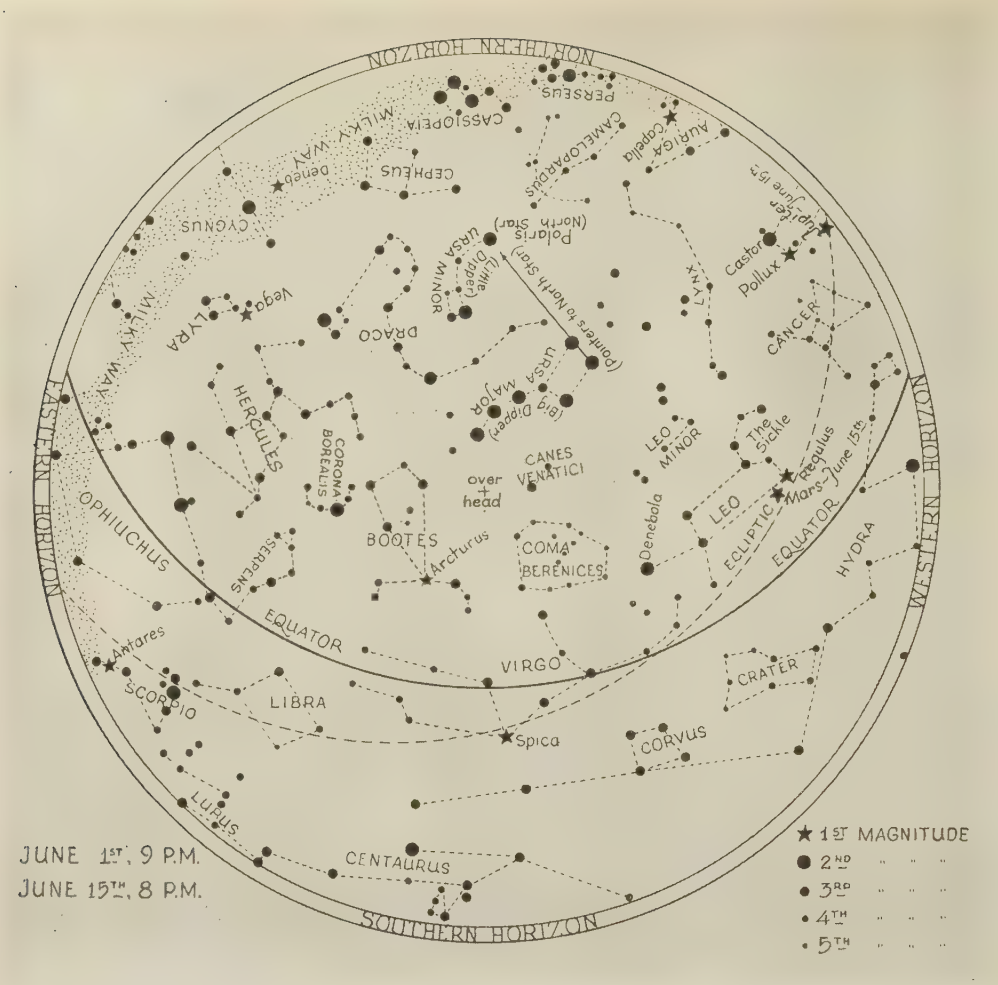
WISCONSIN STEED FORMED BY TREES

BY VICTOR KUTCHIN

"GREEN Mountain Billy," a perfect rampant equestrian statue, may be seen any day at Habel's Corner, on the Green Lake and Ripon Road, one of Wisconsin's smoothest highways. He is more than a phantom, however, though in the twilight, when he appears to best advantage, he might be taken for the perfect mount for Washington Irving's headless horseman. Formed by two trees, the vigorous-appearing steed has attracted the eye of many travelling along the highway, and given rise to tales of a "ghost" horse having taken up its stamping ground along the road, to haunt motorists who have deserted his kind for the automobile. However false these rumors are, the leafy creature at least stands as a constant reminder that this is not completely a horseless age.

GREEN MOUNTAIN BILLY

His presence in the sky has given rise to strange rumors of phantom mounts



To use this map hold it before you in a vertical position and turn it until the direction of the compass that you wish to face is at the bottom. Then below the center of the map, which is the point overhead, will be seen the constellations visible in that part of the heavens. It will not be necessary to turn the map if the direction faced is south

PATHFINDING BY THE STARS

A KNOWLEDGE OF THE HEAVENS WILL SHOW THE WAY HOME

BY ISABEL M. LEWIS

PERHAPS the trail was longer than you expected, or perhaps you lingered along the way and strayed from the beaten track. Night has come and you are doubtful about your bearings. Which way is North, where supper is waiting at camp? Happily you know the stars, and as they blink at you from on high in friendly fashion you let them help you set you on your course again. But how?

Many are familiar with the Pointers of the Big Dipper which point toward the North Star. This is the time-honored and orthodox way in the northern hemisphere of finding the direction of true north on starry nights. Yet a general knowledge of the constellations in their seasons may prove to be even more useful on some occasions. The Big Dipper may be hidden from view by passing clouds at times when stars are shining brightly in other parts of the heavens. But every star is a kindly beacon to guide the traveler on his way. It is well for this purpose to know the principal constellations in their seasons and whether they are in the northern or southern sky, and also in what order they follow one another from east to west.

Many people can recognize the constellation of Orion at sight but do not know that in our northern latitudes Orion crosses the meridian *south* of the zenith; that is, it is never seen in the northern sky and also it cannot be found in the evening sky from May to late in the fall.

It is helpful in finding our way by the stars to know all the twelve constellations of the zodiac, the order in which they appear in the heavens from east to west and their positions in the night sky at different seasons of the year. For example it is well to make the acquaintance of those two beautiful zodiacal constellations of Scorpio and Sagittarius that are so conspicuous in the southern

sky during the vacation months. How many times when at the seashore or in the mountains have you admired the brilliant Antares in Scorpio, that fiery red "Rival of Mars," gleaming low in the southern sky, without knowing its name or that of the peculiar shaped constellation in which it lies? Yet it might prove useful some time to know that Scorpio is always in the *southern* sky in our latitudes rising south of east and setting south of west. The long line of brilliant stars, of which Antares is the brightest, trails away to the southern horizon and forms the curved tail of The Scorpion.

It is also well to remember that Sagittarius, so easily recognized by its little milk-dipper inverted toward the horizon, follows immediately after Scorpio, that is, it is directly east of Scorpio. So, if on some starry night you are seeking your bearings and recognize these two brilliant and distinctive constellations, you will know that when you face these groups you are turned in a general southerly direction. When Scorpio alone is visible it is an indication that this constellation is at that time in the southeast and that Sagittarius has not yet come above the horizon. If Scorpio is disappearing from view and Sagittarius is fully visible, then, when you turn toward Sagittarius, you are facing in a southwesterly direction. When both constellations are completely above the horizon you will be facing nearly due south when you turn toward these groups with Scorpio right and Sagittarius left.

Virgo, The Virgin, one of the largest of the zodiacal constellations, precedes Scorpio. So on June evenings when Antares in Scorpio is just appearing above the southeastern horizon you will find Spica in Virgo nearly due south. Leo, so easily recognized by means of its Sickle, lies northwest of Virgo and as Leo approaches close to the western horizon Spica passes to the southwestern sky.

Due eastward from Leo, in order, comes first the constellation of Coma Berenices, south of the handle of the Big Dipper and separated from it by the two Hunting Dogs, Canes Venatici. Then comes the magnificent Arcturus, that reddish-orange colored star in Boötes, a kite-shaped constellation. Arcturus is one of our most valuable guides in summer night skies. It stays with us all through the summer months until late in the fall and serves as a brilliant beacon for the belated and lonely traveler on starlit nights. Arcturus lies in the extension southward of the curved line of stars that form the handle of the Big Dipper. It passes across the sky from east to west close to the zenith but a little to the south of it. The brilliant Vega lies to the northeast of Boötes. Directly east of it lies the beautiful little circlet of stars, Corona Borealis, the Northern Crown. Next to Corona on the east is the huge constellation of Hercules so distinctive in form that with a little practice one should be able to identify it easily with the aid of the chart.

Let us imagine now that we see in the heavens above us at night these four easily recognized groups—Leo, Boötes, and Corona Borealis followed by Hercules. We know that the first named is the most westerly of the three and that as we look across the sky from Leo toward the brilliant Arcturus, then to Corona and Hercules, we are following a west to east direction with our eyes and that if we turn so as to have Leo on our right and Boötes and Corona on our left we are facing southward; vice versa, if we have Leo to our left and Boötes and Corona to our right we are facing north.

One should remember also and be able to recognize the well-known circumpolar groups, Ursa Major and Ursa Minor, which contain, respectively, the Big Dipper and Little Dipper, Cassiopeia and Draco. These groups are found in our northern skies. The Pole Star, at the end of the handle of the Little Dipper, lies midway between the W in Cassiopeia and the Big Dipper in Ursa Major. The head of Draco is marked by the small group of four stars directly north of Hercules and the tail of Draco curves in a long line of stars to a point nearly on a line with the Pointers and Pole Star.

If one learns the location of the constellations we have mentioned in this article relatively to one another, Scorpio and Sagittarius in the south; Leo, Boötes, Corona and Hercules from west to east and, in the north, Ursa Major and Ursa Minor, Cassiopeia and Draco, he will have some trustworthy guides in the sky that will point out unfailingly the directions of the compass. The stargazer will add to his list of known constellations from month to month two or three at a time and at the same time may devise for himself ways of locating the points of the compass on starry nights without reference to the North Star. Next to a knowledge of the distinctive forms of the constellations it is most important for this purpose to know the positions of the stars relative to one another and the points of the compass. One should know what constellations appear in the various seasons and particularly whether they are southern constellations such as Scorpio and Virgo or northern constellations such as Draco and Ursa Major, or, again, groups such as Boötes and Corona that pass nearly overhead in their diurnal march across the sky from east to west. One who has learned to know and recognize the friendly stars in their seasons need never lose his way under starry skies at night.

On June 22 at 4:28 A. M. Eastern Standard Time the sun will reach its greatest distance north of the equator in Gemini and summer will begin. This will be the longest day of the year in the northern hemisphere.

Mars, Jupiter and Saturn are now in the evening sky. Jupiter, the most brilliant of the three planets, is in Gemini, a little southwest of Pollux, the brightest star in the constellation. Mars is in Leo a few degrees southeast of Regulus and sets about four hours after the sun.

Jupiter is now low in the west at sunset. Saturn is in Sagittarius and rises in the southeast about two hours after sunset. It remains above the horizon throughout the night and reaches its greatest brilliancy in June, when it is as bright as Vega. Saturn is pale yellow in color and is the brightest object in Sagittarius.

Venus is still in the eastern morning sky, low in the northeast at sunrise. It is approaching superior conjunction with the sun and will disappear from the eastern sky in a few weeks. Mercury is not favorably placed.

PICTURE SUBJECTS GALORE
Get Your Camera Out

What Shall I Take?

If that question is in your mind, here are a few suggestions, though once you get "going" there will be no end to the subjects that will seem to present themselves. True, your ingenuity can be brought into play and that phase of picture making is part of its fascination. The results from little picture situations that you create and plan have a special value. You have done something more than "snap" a picture.

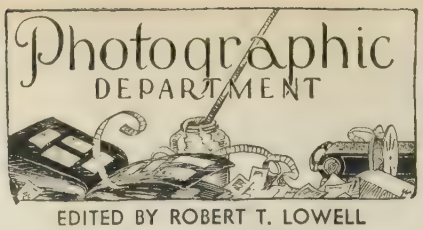
However, many a *lucky* "shot" has turned out to be a masterpiece or a prize-winner. It pays to always have the camera loaded and to be alert to picture opportunities. As a good reporter is said to have a "nose for news", we camera enthusiasts can profitably cultivate an *eye for pictures.*

There are chances all around us. At home—the house itself—an exterior view, then the garden, perhaps with mother, sister or the youngsters among the flowers; interior pictures of favorite cozy nooks and corners; informal portraits by a window or outdoors—even Dad will pose if urged enough.

Next, take the pets; the cat, dog, canary or even the fish in the aquarium. Children at play are chances for interesting pictures that should not be missed. Opportunities also await on the auto trip—there is a scenic subject at most every turn of the road. There are nature subjects right in the home garden and also to be found on the hike in the country. Of course, on vacation, in camp or when traveling one just naturally makes pictures. We can have our fun and keep it too—in pictures.

ENLARGEMENTS FROM CINÉ FILMS ACCEPTED

Small enlargements from movie films—up to the specified 8-inch dimension—will be accepted as entries in the contest. Many photo-finishers are equipped to make negatives from positive image pictures on amateur motion picture film and then small enlargements from the negatives. From a good, sharp "frame" of Ciné film, a pleasing enlargement 3¼ x 4¼ inches can be secured.



EDITED BY ROBERT T. LOWELL

$500.00 SNAPSHOT CONTEST GETS AWAY TO GOOD START
Many Entries Received
Send Yours In

The contest announced last month has already brought enthusiastic response and the number of entries is increasing daily. Here, indeed, is a chance to cash in on the fun of picture making and at the end of the summer you will have a graphic record of the season's activities.

The quality of the entries received thus far is an indication that amateurs today are finding it easy to make remarkably good pictures. While camera equipment has been constantly simplified and film improved there is evidence of better subject composition, of a regard for what makes an *interesting* picture. Remember that this contest is for you if you are an amateur.

While we refer to it as a *snapshot* contest we do not mean that "time exposure" pictures are not eligible. Below is the division of the prize money which amateur picture makers are going to receive. Perhaps the mailman will bring *you* a check—everyone has an equal chance.

$500.00 CASH!

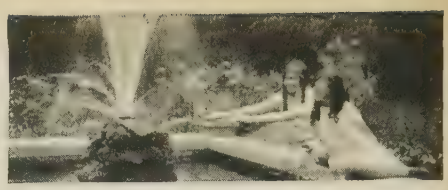
First Prize	$100.00
Second Prize	75.00
Third Prize	50.00
Next 15 Prizes	10.00
Next 25 Prizes	5.00

SPECIAL AWARDS

25 one-year subscriptions to Nature Magazine; winners having privilege of extending their subscription or of designating someone to receive magazine

WHERE TO SEND ENTRIES

Write, or better still, *print* your name and address on the back of each picture submitted and mail to Picture Contest Department, Nature Magazine, 1214 Sixteenth St., N. W., Washington, D. C.



A FEW HELPFUL HINTS TO THE AMATEUR

Some time ago we mentioned what we believe are the three requisites for good pictures and we think this an opportune time to recapitulate:

Correct focus (to give a sharp image), proper exposure (to give a good negative), good composition (to make the picture pleasing to look at).

None of these is difficult if we understand the mechanics of our camera and have read over the little manual that came with it. If you are using a box type camera, do not get closer than about 10 feet to the subject unless a portrait attachment is slipped over the lens. Then get exactly 3½ feet away. With the box camera the lens is set and no adjustment for focus is needed. With focusing cameras, be sure to judge the distance from lens to subject accurately and set the pointer at the corresponding mark. To get nearby objects sharp (6 to 8 feet), pace off the distance—knowing, of course, the length of your stride. If you are a *real* good guesser, you are fortunate.

As to exposure, be sure, with a box camera or one with a single lens, that the subject is in sunlight if making a snapshot.

For distance views or brilliant beach scenes, use the second stop opening. With folding cameras it is well to use the 1/25 second shutter speed and stop 16 for all ordinary subjects in sunlight. For very distant views, beach or water scenes in bright light, stop down to f.22.

THE JUDGES ARE:

Alexander Leventon, Distinguished Pictorial Photographer, Noted Violinist, and Concert Master, Rochester Civic Orchestra; Bayard B. Snowden, Manager of Trade and Technical Advertising, Agfa Ansco Corporation, Binghamton, N. Y.; Robert T. Lowell, Editor Photographic Department, Nature Magazine.

From present indications, the judges are going to have a most interesting, yet difficult, time in selecting the sixty-eight prize-winners.

THE EASY RULES FOR NATURE MAGAZINE'S $500.00 AMATEUR PICTURE CONTEST
(Read Carefully)

1. This contest is strictly for amateurs. Any number of pictures may be entered and at as many different times as desired on or after April 15, 1931. (Pictures shall have been made *on or after that date.*) The Nature Magazine Contest closes July 31, 1931.

2. Pictures may be of *any* subject and of any size up to 8" in the long dimension. Prints should not be mounted, colored, or have any art work applied.

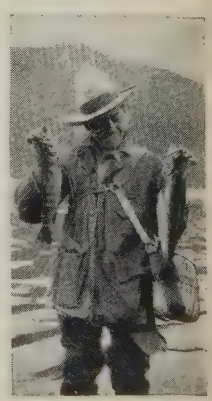
3. No prints can be returned. All mailings are at sender's risk. No letter is required with pictures. *During the Contest Nature Magazine cannot enter into correspondence about pictures submitted.* Announcement of the winners will be made in the September issue of Nature Magazine.

4. No entry blank is required. Just *print* your name and address plainly on the back of each picture submitted. Hold negatives in case they are required.

5. While pictures entered in this contest may also be entered in the Kodak International Competition, *separate* prints must be sent direct to that competition and, of course, the rules of that contest regarded. Nature Magazine cannot forward prints.

6. Pictures will be judged 50% on general subject interest, 25% on composition and 25% on photographic excellence. The decision of the judges shall be final. In the event of a tie the specified award will be paid to each contestant.

Mail all entries to Picture Contest Department, Nature Magazine, Washington, D. C.



NATURE IN PRINT

Again the Weather

Mark Twain once said, "Everyone talks about the weather, but no one does anything about it." His epigram is not strictly true today for the science of meteorology does very much about it in the way of study and prognostication, but the interest has grown even greater because of scientific treatment. Very few individuals can talk or write about weather, however, with either the authority or brilliance of Charles Fitzhugh Talman, librarian for the United States Weather Bureau, and his most recent book, *The Realm of the Air,* is a fascinating parade of interesting facts, myths, superstitions and theories concerning this universal topic of conversation. The dusty freight of the air, the clouds, the rains and snows, the avalanches, hail storms, tornadoes, floods, winds, sunrises and sunsets and other phenomena at which men have marvelled during the centuries are discussed with wide knowledge, keen insight into what makes good reading, and considerable humor. If you want to know where the largest frogs fell and when, how much rain drops on the globe every second, what causes tornadoes, why glaciers move, or where red snow appears, this book has the authoritative answer set down in clear, understandable English, and all the collateral data besides. Mr. Talman has written many articles for Nature Magazine, some of which are revised and reprinted in this book. He is one of the few scientists who have the gift of making what would be in another's hands drab data read like fiction without losing an iota of preciseness or accuracy. This reviewer read *The Realm of the Air* at one sitting—an event that rarely occurs even with novels. It is the sort of volume to take by the fireside when a "spell o' weather" is occurring outdoors and thoroughly to enjoy. The Bobbs-Merrill Company, the publishers, price it at $4.

Alaskan Eskimos

One of the most startling recent books of fiction is *Eskimo,* written by Peter Freuchen who lived many years among the Eskimos. On the heels of this volume comes a quite different but intensely interesting book that has been in process of preparation for some years. It is *Among the Eskimos of Wales, Alaska* by Harrison Robertson Thornton. It is edited and annotated by Neda S. Thornton and William M. Thornton, Jr. from writings and notes made during the period from 1890 to 1893. It is an intimate story of a race of people who to us must always be thoroughly exotic. It touches upon all of the many phases of Eskimo life and society, even down to their table manners, if any. It is a thoroughly fascinating book, the sale of which will probably not be so wide as the Eskimo in fiction form because it is non-fiction and will not be widely exploited. It is published by the Johns Hopkins Press of Baltimore and is listed to sell at four dollars.

TAKEN with a Graflex Camera, the above picture illustrates the tremendous advantage of being able to see your subject right "in" the camera—through the Graflex hood and ground glass.

The glass showed when focus was perfect, and exactly how much of the reflection would appear.

No guesswork about whether the child appeared "natural"—the ground glass proved it! And the super-swift Graflex shutter prevented any movement from blurring the picture.

EXECUTIVES—*Write for data re; Business Uses of Graflex.*

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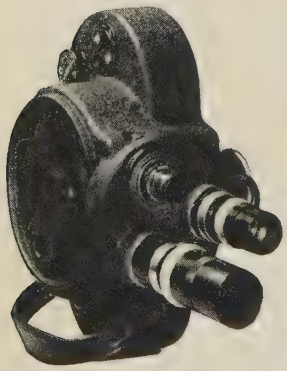

FILMO CAMERAS *range from $92 to $486; Filmo Projectors from $198 to $295. Filmo 70-D outfit shown is $361, with Sesamee-locked case.*

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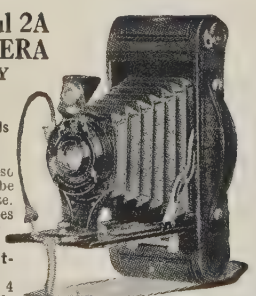

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New Worlds to Plant

The gardener is always looking for new worlds to conquer, new plants with which to experiment. The Western Mountains form a world the inhabitants of which have gardening possibilities too little known, and Mrs. Anderson McCully, a pioneer of the high places, writes of them as a Columbus in *American Alpines in the Garden,* published by Macmillan. Mrs. McCully knows the Rockies; she has botanized in the West from British Columbia to Southern California; she has experimented with hundreds of varieties in her rock gardens. Thus her descriptions of the country in which American mountain flowers grow, and of the flowers themselves and their adaptation to the garden plot, are authentic and authoritative. She includes in her book valuable advice and information on rock gardening generally, and makes an important contribution to the garden library. Her book is priced at $2.50.

The Out-of-Doors

If asked to describe Willis Hudspeth from his latest poetical collection, *The Out-of-Doors,* we might characterize him as a combination of Richard Steele, Sidney Lanier and Francis Parkman, in that he reveals certain qualities of all three great writers. Primarily the observer, interested in all life, he is particularly attuned to the rugged melodies of primitive simple existence; moreover, he is able to transcribe these melodies to the printed page in musical and rhythmic phrases. He is a singer of the wilderness, just as Lanier was a singer of the beauties of his South. Equal with these traits is his sympathy for the empire-builders and his understanding of the urge that drives men to the out-of-the-way places. His verse does not mistake sentimentality for sentiment, or drool over the wonders of Nature in the manner common to many Nature poets of today; his pictures are sharp-etched, accurate; his music has the virility and freshness of the winds in the pines. Although Hudspeth probably will never rise above the rank of a minor poet, at least he will be remembered for his rhythmic lines and vigorous interpretation of the out-of-doors. The book is published by the Claflin Printing Co., 2714 North 48th Street, Lincoln, Nebraska.

P. F. H.

Classifying the Plants

One of the most extensive and scholarly of recent scientific publications is *Taxonomy of the Flowering Plants,* by Arthur Monrad Johnson of the University of California at Los Angeles. In this 850-page work, the author has attempted to strip his much-abused subject of its excess and entangling baggage, and prune away much of the dead growth that has accumulated with the years. In Part I Dr. Johnson explains his system and the principles underlying it, and applies these principles in Part II in such a way that teachers may easily combine laboratory study with theory. The method of Engler and Prantl is followed primarily, but certain practical features of the systems of Warming-Potter, Wettstein and Rendle are incorporated into the work. The book is published by the Century Company.

Paddlewings Penguin

Who isn't fascinated and amused by the penguin, in picture or in the feather? Exploration in the Antarctic has made this fellow a familiar figure in our Sunday roto pages and elsewhere. Now along comes Wilfrid S. Bronson, artist and author, with a story of the entertaining penguin for the young folks. And he has done it well in *Paddlewings, the Penguin of Galapagos*. He brings in the fishes of the sea nearby where Paddlewings grows and lives and weaves the whole into a story the youngsters will enjoy. We recently reviewed Mr. Bronson's excellent *Fingerfins* and recommend this companion book if you are looking around for a gift for youth. Macmillan has published this and it sells for two dollars.

Speech! Speech!

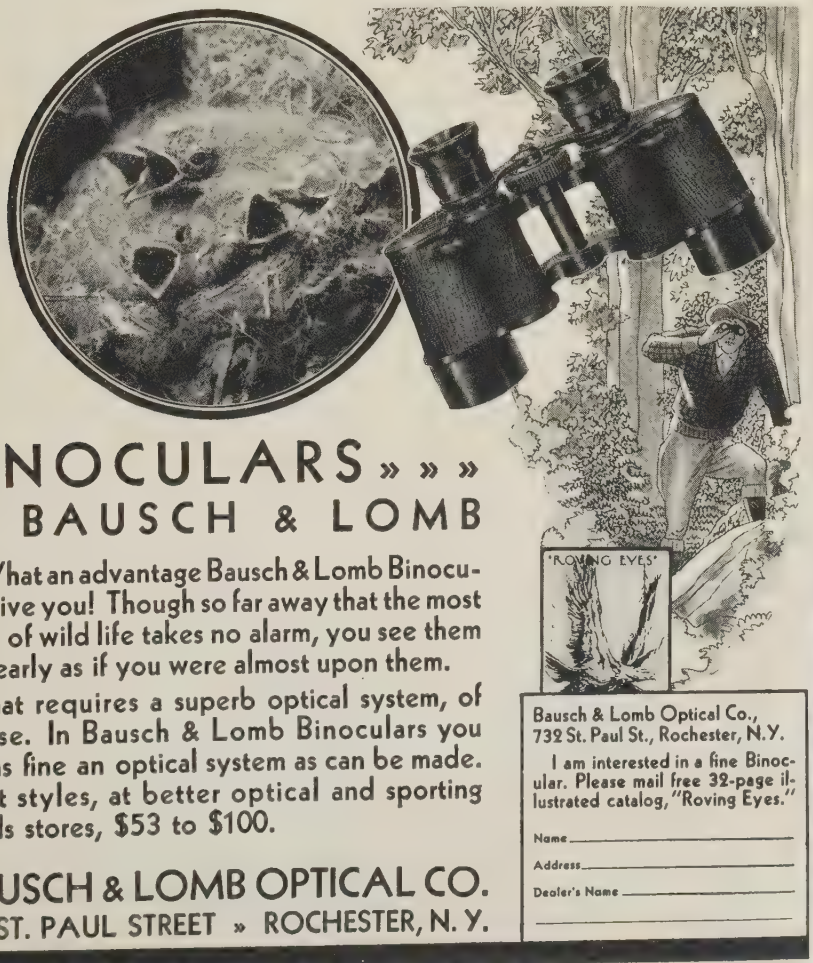
Now and again we receive books for review that are not strictly Nature books but which, by virtue of their very different character, specially commend themselves for attention. Such a volume is *A Speech for Every Occasion,* the title of which is thoroughly descriptive with emphasis on the "every". We have heard a lot of terrible speeches in our newspaper life; speeches essayed on the spur of the moment by people who were destined to be anything but speakers; speeches laboriously born out of the brain of one well equipped to give birth to such utterances; speeches of all kinds. Now here comes a book that can hardly be said to inspire originality but does provide some concise and appropriate suggestions of what to say under almost any circumstance, even in the event that you were involved in the "presentation of a watch to a political leader." We see no reason why this book should not become a best seller, what with those who aren't writing plays or novels doing a lot of speech-making. Anyway the book is published by Noble and Noble, 76 Fifth Avenue, New York.

Poetry

Two attractive little collections of poems have just come to us from the Bozart Press of Atlanta, Georgia, being *The Diamond of Marifa,* by Carl B. Adams, and *Silhouettes of the Latin Quarter,* by Virginia Church. The first named consists of a longer poem story and a number of attractive short verse, and the latter is what the title suggests and of interest to those who may have visited or lived in the Latin Quarter of Paris. They are listed at $2.00 and $1.50 respectively.

On Bird Houses

We have just received a new addition to the literature on bird houses and how to build them. Until now about the only effective pamphlet we have seen has been the U. S. Department of Agriculture bulletin but now the Cranbook Institute of Science, Bloomfield Hills, Massachusetts, has gotten out *Bird Houses, How to Make and Where to Place Them,* written and illustrated by Edmund J. Sawyer. It sells for twenty cents.



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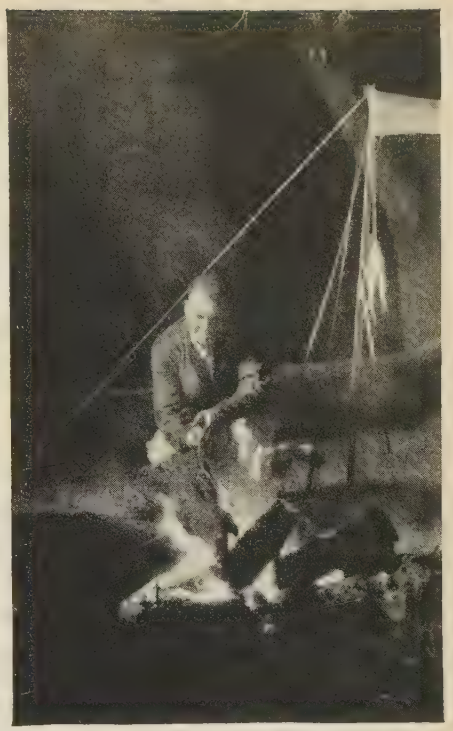

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LAMPS

1.5 volts to 125 will flash it.

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This new lamp, manufactured by General Electric and sold by the National Lamp Works and the Edison Lamp Works, operates without smoke, noise, odor or dust. A single brilliant flash that comes so quick that subjects do not even blink, and its work is done.

Next time you buy film, get as many MAZDA Photoflash Lamps as you intend to take night pictures. For best results you should also have a reflector unit. These employ batteries to flash the lamp and are available at extremely low prices.

When buying Photoflash lamps, always look for the G. E. in a circle and the words "Photoflash Lamp" on the disk within the bulb.

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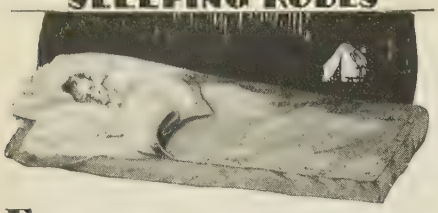
WOODS ARCTIC DOWN SLEEPING ROBES



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Trail Club Visits Smokies

The live-wire Potomac Appalachian Trail Club, with headquarters at Washington, D. C., has scheduled a summer camp of two weeks' duration in the heart of the Great Smokies during June, and plans to conquer most of the important peaks in Smoky Mountain National Park on a series of hiking trips. Mt. LeConte, the Chimney Tops, Clingman's Dome, Mt. Guyot and other mountain monarchs on the Tennessee side of the park are the goals of the active group. The camp will be located at Gatlinsburg, Tennessee, and will coincide in time with the 1931 Appalachian Trail Conference to be held there June 12 and 13.

The trailers, led by energetic Myron H. Avery, have completed probably a greater proportion of their section of the Long Trail from Maine to Georgia than any other unit. Through their efforts it is now possible to travel on foot from Harpers Ferry, West Virginia, to Rockfish Gap at the southern end of Shenandoah National Park, along the crest of the picturesque Blue Ridge Mountains, without touching paved highways except to cross them. Next year the club plans to open a stretch of trail from the Susquehanna River to the Maryland–Pennsylvania state line.

All the trails are marked with the well-known "A-T" monogram; but to further aid travelers, the club is publishing an exhaustive and complete guidebook that not only describes the trail but features the botanical, geological and faunal aspects of the interesting mountain region. This book is being edited by Harold Allen, and will cover 525 miles of trails, including 78 miles in Pennsylvania, and the entire distance along the Blue Ridge from Harpers Ferry to the Carolina state line.

The club has at present 296 members, 131 of which are women. About one-third of the total membership will go to the Smoky camp in June to see the rival peaks which surpass in height, although hardly in beauty, their well-known Virginia ranges.

For Gardeners

Many gardeners are specializing today in type gardens—rock gardens, gardens of annuals, biennials or perennials, water gardens; and for these an authoritative literature is growing up. One of the latest additions is *Perennial Gardens,* by H. Stuart Ortloff, which tells how and where to use perennials and how to cultivate and propagate them. The book is designed especially for use by the small-home owner and is written by a landscape architect who has proved his ideas by years of practice. It is published by Macmillan for $1.25.

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TEN MILE EYES! Think of the things you can see! Ten mile radius—a 20 mile circle—nearly 400 square miles. And you can easily have them. If you can see one mile, these superpower French 10x32mm. stereo-prism binoculars will extend your vision 10 TIMES. ENJOY YOURSELF 10 times more! Multiply pleasures of hobby and sport. Use a pair touring, observation, hunting, golfing, nature study, astronomy, etc. Superbly made for a lifetime of service. Case and straps free.

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Did you know many ordinary field glasses have but four lenses and most of the better ones only six? But this binocular has 10 LENSES and 4 PRISMS. No wonder it gives an expansive field, brilliant illumination and fine definition.

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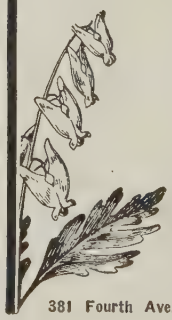
—CLYDE FISHER

NATURE RAMBLES
SPRING

by Oliver Perry Medsger

with a foreword by Clyde Fisher, Ph.D., LL.D. American Museum of Natural History



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Size, Single Mattress 28"x75", weight 7½ lbs. Price $3.95. Double Mattress 48"x75". Price $7.50 postpaid.

Both Mattresses packed in Waterproof Duffelbag. Write for Catalog.

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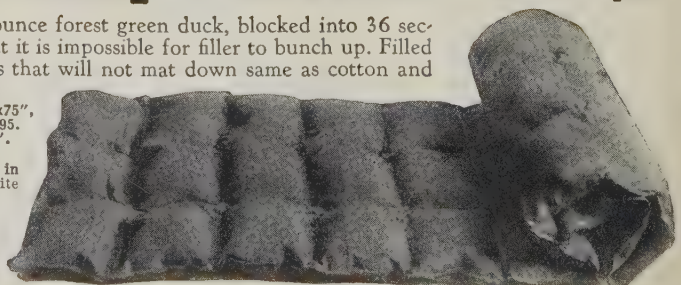

PLANTING THE GARDEN, MONTH BY MONTH

By Romaine B. Ware

June in our gardens should be the climax of the spring season. The spring bulbs are through, the rainbow display of iris is just reaching its height and now come the peonies and roses. Surely June is a blessed month in the flower garden. Countless lesser satellites gleam forth at this season, all adding their bit to the galaxy of color and billows of fragrance. And don't overlook the item of fragrance. Hybridizers have been working so hard with many flowers to get size and form that frequently they have completely forgotten this crowning grace. I doubt if any flower can be satisfying without fragrance.

The June garden, however, though it is a bower of color and fragrance, does not just happen. It is the result of fall planting and spring care. In most cases it goes back still further to last spring and summer. And that means the care you give your garden during the next few months will largely control the show next June. So you see garden making is not merely a season to season task; it should be a gradually accumulative process with each year attaining better results than the year before. Your garden never stands still; either it goes forward or slips back and neglect promptly leaves its mark for every casual passerby to see.

Garden work at this season is less a matter of planting than one devoted to cultural care. Perennials such as chrysanthemums, helenium and others must be pinched back to cause bushy growth. Cosmos, zinnias, snapdragons and many others among the annuals need similar treatment. In countless gardens we see plants of all kinds growing tall and falling over, simply because the gardener neglects this important task. Don't be afraid to pinch them back. It's the very best thing for them. There is little, if any, danger of injuring the plant. If you have not done so, go out right away and pinch out the tips of your annual plants and watch them branch out and become bushy.

This is the danger time for sweet peas. They like cool weather and as the heat of summer approaches they suffer. Primarily they want a cool soil around their roots. This you may aid in maintaining by applying a mulch upon the soil for two or three feet both sides of the row. Lawn clippings will do for this, but peat moss is doubtless better. The mulch will also aid in keeping the soil moist. Water may be applied right through the mulch and also liquid manures.

Spring-flowering shrubs should be pruned promptly after their blossoms fade. Varieties that are inclined to grow tall and top-

Keep in the Moisture
Keep out weeds

THE SUMMER mulch of G.P.M. Peat Moss is a somewhat modern application of one of the oldest, time-tried garden ideas. Instead of continuously cultivating your soil to maintain a dust mulch which prevents the hot summer Sun and dry winds from baking and caking the soil, use G.P.M. Peat Moss. Spread evenly over the surface to a depth of an inch or two after your plants are all up, G.P.M. is far better than a dust mulch. It keeps the soil underneath cool, sweet, and moist. It prevents baking and caking. It entirely eliminates the back-breaking necessity for summer cultivating. It prevents about 95% of weeds from growing at all and the few that do come through can easily be pulled as they offer no resistance.

G.P.M. also absorbs both the shock of noonday heat and the cooling breeze of night, equalizing the temperature in the soil to make better growing conditions and increase the activity of necessary soil bacteria. Like "billions of tiny sponges" G.P.M. is a perfect insulator and thus a perfect mulch. Order from your dealer or write us direct for literature and prices.

2½-BUSHEL SAMPLE PACKAGE $1.75 POST PAID

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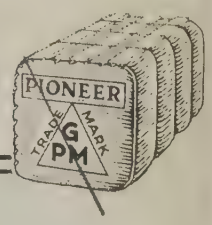
PEAT MOSS



A LAWN DRESSING that will not burn!

A PROFESSIONAL GREENKEEPER for one of the beautiful golf courses is among the first to write us about the advantages of DRICONURE over other fertilizers. "Top dressing with DRICONURE gave us *wonderful* results" he writes, "Did not burn . . . gave us the *best* lawns we *ever* had." You too can use DRICONURE with safety and satisfaction. It is economical and will prove to be the finest lawn and top dressing you have ever used. No matter how much you use or how often you use it, DRICONURE will *not* burn. It will help keep a luxurious lawn all summer long. It will add to the humus supply and build up soil reserve and a strong root system.

Let us send you sample and prices. Large bag contains 3½ bushels of light, fluffy, finely granulated dressing, free of weed seeds or other trash—and DRICONURE is a safe fertilizer.

DRICONURE
PEAT MOSS

Atkins & Durbrow, Inc.
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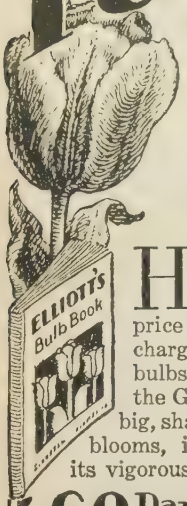
Elliott's Guaranteed TULIPS

SOLD WITH A MONEY BACK BOND



The World's Finest Tulips at Bargain Prices . . . Free Fertilizer . . . Order NOW ~ Pay next Fall ~ Offer Expires July 1 . . . Valuable Bulb Book ~ FREE

HERE is your opportunity to get the aristocrats of the Tulip Kingdom at a price much lower than is often charged for nameless, ordinary bulbs. Every tulip offered is in the Giant class, famous for its big, shapely, exquisitely colored blooms, its long, strong stems, its vigorous, sturdy growth.

60 Darwin and Breeder Tulips $3.30

COLLECTION A

6 CLARA BUTT . . . . . *Delicate Salmon Pink*
6 EUTERPE . . *Mauve-Lavender, Lilac-Edged*
6 FARNCOMBE SANDERS . . . *Fiery Scarlet*
6 PRIDE OF HAARLEM . . . . *Deep Old Rose*
6 PRINCESS ELIZABETH . *Pink, Light Border*
6 BARONNE *de la* TONNAYE . . . *Vivid Pink*
6 BRONZE QUEEN . *Buff and Golden Bronze*
6 LOUIS XIV . . . . . *Royal Purple and Gold*
6 GLOW . . . . . *Deep Glowing Vermilion*
6 INGLESCOMBE YELLOW . . *Glossy Canary (Darwin Type)*

COLLECTION B: 100 Bulbs (10 each) $4.95
COLLECTION C: 250 Bulbs (25 each) $11.75

These 3 collections are Special Bargain Offers. They are not duplicated in our catalog. They must be ordered from this advertisement.

Carriage prepaid on all Collections Everywhere in the United States

WITH every order, we will send FREE, a liberal supply of Superfine Fertilizer and Soil Conditioner, made by us especially for these collections. This plant food will enrich your soil, and make your results better.

We guarantee that these bulbs are *true to name*, and have reached their full maturity, so will produce perfect blooms. We guarantee that they will grow in any climate and in almost any kind of soil. If you are dissatisfied in any way, *your money will be refunded instantly.* There are no strings to this Bond.

Our buyers must sail early in July to be certain to get the pick of the best Holland crops. *YOUR ORDER MUST REACH US BEFORE JULY 1.* October is planting time; we make no deliveries until then. We do not require payment until delivery time. *IF YOU WISH TO SEND CASH WITH ORDER, YOU MAY DEDUCT 5%.*

FREE BULB BOOK: A garden grown from bulbs is a lovely, rich, aristocratic garden. For bulbs produce beautiful flowers. Read about a wonderful choice of Hyacinths, Narcissus, Tulips, Lilies, and many unusual flowers. Send for our Free Bulb Book; IT IS A FREE COURSE IN BULB CULTURE. For 42 years it has been the guide to those who grow the better kinds of flowers.

The Biggest Bulb House in the World

ELLIOTT NURSERY CO.
510 Magee Bldg. . . Pittsburgh, Pa.

See Our Western Wonderlands Differently

with

The Vagabonds of the Trail

See page 359

heavy need severe cutting back. Prune now rather than later and you will not sacrifice next season's blooming wood. Evergreens such as hemlock, spruce, yew, juniper and arborvitae should be pruned now. Shearing at this season while the plant is in active growth will stimulate bud formation and speedy recovery from the pruning. Except where necessary to re-shape a plant, do not cut back to the old wood. Deciduous hedges should receive their hardest pruning now as this is their season of most active growth. Neglect now means a thin, overgrown hedge that will prove difficult to get back into shape later.

While we are on the subject of pruning and cutting back, your violas, forget-me-nots and sun-roses (helianthemums) should be sheared to force a second crop of bloom. Don't wait too long to do this or the plants may mature too much to branch out promptly. Sweet alyssum and many annuals respond to shearing, also.

Many perennials require staking at this time and right here is your opportunity to show artistic ability. Try to so place your stakes that they will be almost unseen. The best stakes are of slender bamboo stained green. These tied with green raffia, if properly placed, will not spoil the natural appearance of the plant. You may have to use several stakes to some plants, but even this is better than heavy stakes and plants so tied that they look almost strangled.

Trees, newly-planted either this spring or last fall, will welcome a mulch over the soil to the extent of their root spread. A mulch aids in keeping the soil cool and moist, much to the encouragement of root growth. The mulching of rose beds is highly recommended, rather than cultivation from now on. Experiments in recent years seem to indicate that a one- or two-inch mulch of peat moss will do everything claimed for constant cultivation and do it better without any back-breaking, blister-forming labor. This may seem like a lazy man's scheme, but results prove otherwise.

But while mulching may save much time and labor, nothing as yet takes the place of spraying and dusting. Hollyhocks, delphinium, phlox and other perennials must be sprayed with Bordeaux or the blight or rust will attack them. Roses must be dusted and sprayed regularly and thoroughly or the pests and blights will gain the upper hand. Neglect means trouble and failure. Spraying and dusting are not difficult if done regularly.

With the height of the peony season almost upon us, let me suggest a way to enjoy to the utmost the perfection of peony blooms. When the blooms begin to open, cut a few of them and allow them to open in the house where the sun will not fade their delicate tints. This especially applies to the delicate pinks and flesh colors that frequently fade so quickly. They will last longer and open with even greater perfection by this method. By the way, if you are not familiar with the modern peony, try to visit some of the flower shows at this season or the fields of some peony grower. The modern peony is such a vast improvement over the older kinds that once you know them, you'll want some in your garden. Choose now while they are in bloom. In no other way can you be sure of getting just what you want.

This is the season to plant tender water

FIELD-GROWN STOCK, 250 ACRES

4 American Spruce 4 Norway Spruce 2 Chinese Arborvitae

All trees 3 to 5 years old. 12 to 15 inches high.

Order now direct from this advt.

We ship during May, June & July

10 EVERGREENS, $1.85
4 Norway Spruce, 2 Arborvitae, 2 Scotch Pine, 2 Juniperus Communis, 15 to 20 inches high.

COLORADO BLUE SPRUCE

6 to 7 years old: two trees.....$1.10
8-9-year-old trees, 3 times transplanted, extra bushy and nicely shaped. $1.10 each.

The "GOD TREE of the HIMALAYAS"
Silver Tint Foliage Blue
Cedrus Deodora
A Beautiful Evergreen Tree
2 YEARS OLD.....2 TREES, $1.10

MUGHO PINE, ball shape growing, 10 to 12 inches. 2 FOR **$1.10**

With every order of $5.50 or over you may select, FREE, $1.10 worth of any stock from this advertisement.

GUARANTEE Everything Guaranteed

RHODODENDRONS

(Maximum Rosebay), pinkish white flowers. (Catawbiense) flower is reddish purple. (Carolinanum), dark pink. Three plants (1 and 1½ ft. high) (Large Flowering) **$1.10**

HARDY ORIENTAL POPPIES
rare collection of 18 varieties, flowers 8 inches across, beautiful colors, 18 roots, $3.50.

MAGNOLIA TREES.....2 TREES, $1.10
HARDY AZALEAS (Nudiflora)—A handsome, early, free-flowering, deep pink species, very profuse and showy. A beautiful variety. 1 to 2 ft. Blooming age. Each..... **$1.10**
Lilacs, White and Pink. 2 shrubs.....$1.10
Althea (Rose of Sharon), Pink, Red. 2 shrubs $1.10
Hardy Hydrangeas, Blue, Pink. 2 shrubs.....$1.10
Golden Bell, Yellow flowers in early Spring. 2 shrubs $1.10
Butterfly Bushes. 2 shrubs.....$1.10
Cornus (Dogwood). 2 shrubs.....$1.10
Weigela Rosea. 2 shrubs.....$1.10
Japanese Barberry, 1 and 1½ ft. high, bushy, 6 plants (4 years).....$1.10
Hardy Chrysanthemums, assorted, 8 plants. Very large flowering.....$1.10
Van Houttei (Bridal Wreath), 2 shrubs.....$1.10
50 PANSIES, ruffled-flowering mixture, beautiful markings (in bud).....$1.10
Biota Chinese Arborvitae (seedlings).....$5.00 per 100: $45.00 per 1000.

HARDY PERENNIALS 10 Cents Each

250 acres. Blooming Age Delphiniums, Dark Blue and Light Blue; Columbines, all colors; Oriental Poppies, flowers 8 inches across, different colors; Double Hollyhocks, beautiful colors; Shasta Daisies, Yellow Daisies; Hardy Carnations, 6 colors; Painted Daisies; Gaillardias; Sweet Williams, Foxgloves, different colors.

ORDER MUST AMOUNT TO $1.10 OR MORE

Rock Garden Plants, 25 varieties.....$2.20
Rock Garden Evergreens, 10 varieties.....$1.00
Large-flowering Perennial Phlox, diversified and brilliant colors, 6 plants for.....$1.10
50 Novelty Snapdragon plants, asst.....$1.10
50 Aster plants, Exhibit Type, asst.....$1.10
50 Calendula plants, Orange King, asst.....$1.10
50 Dahlia Flow., Zinnia plants, asst.....$1.10
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50 Straw Flower plants, assorted.....$1.10

Add 25c for Postage & Packing
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The FISCHER NURSERIES EASTON, PA.

THE HORTICULTURAL Advertisers using the pages of Nature Magazine are the most reputable firms in the business.

PATRONIZE THEM and obtain the best in seeds and plants

Mention Nature Magazine; it will help

lilies. They should not go in till the water in your pool is actually warm. In northern sections, planting should be delayed a few more weeks to let things become warm and settled. Few flowers in our gardens will provide the wealth of bloom over as long a season and give the all-round satisfaction as will water lilies. A simple little water garden with its reflections, its play of light and shadow, adds immeasurably to the charm and distinction of any garden. You may garden without a pool, but you are overlooking one of the most important adjuncts to a perfect garden.

Keep up your succession plantings of gladiolus that you may have blooms right up till frost. Glads are among the most important flowers for cutting and you can't have too many of them. You will find it interesting to keep careful records of the number of days between planting and blooming for the different varieties. Such records will prove useful in future planting; you'll find, in all cases, the more definite information one has about his plants the more interesting his gardening will become.

This is the season for planting most dahlias. It is unwise to plant them too early. Both tubers and green plants are available, the latter usually at half the price of tubers. Green plants from reliable sources are just as satisfactory as tubers. If the cuttings have been properly made, as most of them are, tubers will be produced for next year's planting. The price of tubers is higher because there are but a limited number, while green plants may be easily produced in quantities. Some very fine new dahlias are on the market this year and you will want to try them as well as some of the older kinds.

Succession plantings of some of the annuals should be made now. Annual gypsophila, candytuft, sweet alyssum, poppies, especially the beautiful shirleys, and mignonette are a few that should be kept coming on. Our gardens are wonderful opportunities wherein we may, with the aid of Nature's immutable forces, create masterpieces of color and form. The laws that must be understood and followed are very few and very simple. Just a little patient observation will open before us the wealth of Nature's secrets and our gardens will bloom bountifully.

Westchester's Gardens

By Helen Kennedy Stevens

Nearly everyone who loves their own part of the country feels that Nature has blessed it in some special way, and in Westchester County, New York, we are particularly proud of our beautiful rolling country, our lordly Hudson and peaceful Sound, and also our gardens. During May and June on Tuesday and Saturday afternoons some fifty of the loveliest of these gardens are opened to the public under the auspices of the Westchester County Children's Association, the small admission fee going to support this work for the welfare of children.

For the Nature students there are some particularly interesting gardens. Perhaps the most interesting is the 100-acre wild flower garden of Mr. Benjamin T. Fairchild in North Greenwich. Here are ten miles of paths on an estate loved and cared for to keep it a natural garden,—lovely hillside slopes, thousands of rare wild flowers, and for those who love to wander through the narrow woodland path, a day of pure joy.

Among the real treats of a work-a-day world are the rhododendrons at "Westerleigh" the estate of Mr. and Mrs. John Hanes in Rye. As one drives up from the gateway under great beech trees, suddenly a turn brings the first of the rhododendrons out. Five, six, seven and eight feet tall are the bushes and the colors take one's breath away. Turning off from the road, loath to leave these lovely ones, we wander through shrub bordered paths until sud-

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The comfort and beauty of Rustic Hickory Furniture takes it out of the ordinary class and gives it an air of distinction. Nature—Plus Art.

Send today for illustrated catalog D, showing this splendid line of natural wood furniture.

RUSTIC HICKORY FURNITURE COMPANY
1701 State Street, La Porte, Ind.

OUR NAME BRANDED ON EVERY PIECE

Bring the glory of the hills to your home

NOTHING is more beautiful than the glorious spring blooms of Rhododendrons and Azaleas—modest white, soft orchid pink to orange yellows. Our nursery-grown native Rhododendrons can come to you at very reasonable prices. Catalog on request.

Special offer for $25 includes 12 plants, 1 to 3 feet high, ten different, enough to cover 25 to 40 sq. feet. The blooms are from white to orange, April to July—a wondrous series of blossoms.

La Bars' broad-leafed evergreens call for no maintenance expense. Cold will not kill them. They blend with all forms of architecture. Our nursery-grown stock conserves native forests.

Price for this superior collection only $25, packed, f. o. b. Stroudsburg. Please send check with order.

Each plant marked and guaranteed true to name. We have the largest Rhododendron nursery in America.

Visitors welcome to nursery. Write for full list of shrubs in this offer.

LA BARS' RHODODENDRON NURSERY
Box M STROUDSBURG, PA.

A Garden Full of the World's Best Iris

$25.00 worth for $6.75

FOR a garden full of fine flowers, in all the colors of the rainbow, at a nominal cost, this is a real opportunity and a great bargain.

While I cannot label the varieties in this "RAINBOW COLLECTION" I guarantee that it will contain many choice varieties, and that each collection will contain such world famous ones as Ambassadeur, Lent A. Williamson, Mother of Pearl, Lord of June, etc.

Each collection would cost at least $25.00 if the varieties were purchased separately at catalogue prices. As I grow only the finest sorts, you are sure to be pleased. Certain varieties in my gardens must be moved from time to time to make room for the propagation of newer sorts, and in a collection of 1200 varieties there are always surplus stocks of some of them. This combination of circumstances makes this choice collection possible at a nominal price.

Rainbow collection—50 choice hardy garden Iris, my selection, without labels, for $6.75.
100 plants, choice assortment, without labels, $12.00.

ROBERT WAYMAN, Box U, Bayside, Long Island, N. Y.

IT'S LESS WORK WITH A **Shower Pipe**

Easiest and quickest way to water your lawn or garden. No need to waste summer evenings holding a hose. A Shower Pipe puts an end to this tedious work. Eight feet long (two 4 ft. sections) with four sprays. Sprinkles a 10 x 20 ft. area. Reaches every nook and corner. Does away with all hand-watering. A modern sprinkler for the busy man. No moving parts to wear out. Buy a Shower Pipe and you'll never have to buy another sprinkler. Thousands in use. Guaranteed. Low priced. Write for circular.

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Irrigation equipment of all kinds

IRIS

FREE CATALOGUE containing a wonderful list. Send today for the book of outstanding iris.

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Grower and Originator of Rare Varieties
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WATER GARDENS AND GOLD FISH
Beldt's Aquarium

WATER LILIES
All colors; hardy, day and night bloomers; aquarium plants; complete water gardens.

Tropical & Gold Fish
Rare species; collections at reasonable prices. See them in the

Catalog in Colors
describing aquariums and supplies for fish fanciers and water gardens, free.

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ROWEDDERS FOR BETTER DUTCH BULBS

Folder describing our Peerless Tulips, Hyacinths and Narcissus gladly mailed.

Rowedders
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SAFEGUARD *your* Lovely Flowers

These tiny green, red or black Aphis feed upon the tender foliage in your garden, and rob your flowers of their beauty. Be prepared to kill these insects. Have on hand a package of "Black Leaf 40," the spray depended upon by gardeners to kill Aphis, Thrip, Leaf-hopper and similar insects. The garden package of "Black Leaf 40", costing 35c, makes 6 gallons of effective spray. Buy it from your dealer.

Tobacco By-Products & Chemical Corp., Inc., Louisville, Ky.

"Black Leaf 40"

FEED YOUR PLANTS
STIM-(U)-PLANT
ORIGINAL Plant Food Tablet
SEE them immediately increase in size, brilliance and fragrance. Use it on all shrubs, plants and vegetables. 100 Tablets 75c—1000 $3.50.
STIMUPLANT LABORATORIES, INC.
Long Island City, N. Y.

NIGHTINGALE **IRIS COLLECTION**
Three large, fragrant, 50c Reds; 3 large, tall, fragrant, 50c Lavenders; also 1 beautiful Pink for **50c** prompt orders. All labeled; prepaid; full instructions, only 50c. Three collections for $1. This ideal time to plant. Sweetest offer ever made. List of ten beautiful, cheap collections, Iris literature free.
OTWELL IRIS FIELDS CARLINVILLE, ILL.

denly we see more rhododendrons, acres of them, every color. Paths lead in all directions and the beauty of them leaves one speechless. When the rhododendrons close, the azaleas begin. It is almost impossible to give an idea of their beauty. They are usually in their glory early in June. Saturday, June 6, is the date set this year and the garden will be open rain or shine from two until six in the afternoon.

On the Tuesday afternoons many small gardens are shown and these are often of special interest to people who have tiny gardens of their own and want to study plants. Several of the gardens, including those of Miss Georgine Iselin and Mrs. DeLancey Kane in New Rochelle and Mr. and Mrs. Henry Ittleson's on Manursing Island, are water-front gardens on the Sound. Quite in contrast to those is the desert garden of Mr. and Mrs. Isaac Gimbel and Mr. and Mrs. Bernard Gimbel on King Street, Port Chester.

The oriental garden of Mr. and Mrs. Charles F. Meyer at Katonah has caught the mystery and quiet of the east. There is here a fascinating waterfall down the rocks of the wooded hillside. The water from the sparkling pool trickles out and is caught and held in a giant clam shell. These shells measure nearly three feet across and have come from the Pacific Ocean. They are placed at intervals on the slope forming lovely bird baths. Down below in the dark quiet one could sit for hours and study the birds that love these protected trees.

Of the more formal gardens, "Avalon," the Mount Kisco estate of Mr. and Mrs. Robert S. Brewster is perhaps the loveliest. Its rose garden, its lawns and shrubs have already given joy to hundreds of visitors.

These, of course, are only a few of the gardens. For those who want to see them all, we shall be only too happy to forward the complete schedule. The Westchester County Children's Association, for whose benefit the gardens are opened, is a nonsectarian organization of citizens devoted to the welfare of children, and although supported entirely by voluntary contributions spends its budget in public service.

Bird Refuges

Ways of attracting birds are described in *Local Bird Refuges,* a bulletin issued by the U. S. Department of Agriculture as Farmers' Bulletin No. 1644. It is written by W. L. McAtee, and simply outlines practical methods for increasing the local bird population. Birds, the author writes, have an average population throughout the country of but two to the acre, but as many as fifty-nine pairs have been attracted to a single acre by proper methods. Protection, food and water are the three requisites to a successful campaign to enlist the feathered friends in the army that keeps down foes of the farmer.

Yosians Carry On

Though the New York *World* has gone to that limbo from which no newspaper returneth, its Nature editor, J. Otis Swift, the founder and head of that informal organization of Nature lovers known as Yosians, still writes his Nature column and leads his trips. He now has a desk with the *World's* successor, the *World-Telegram,* of the Scripps-Howard chain of newspapers.

SALTON SEA BIRD REFUGE

(Continued from page 371)

to have gone to work with shotguns. They killed every adult bird, twisted the necks of the young, and trod upon every nest that contained eggs. Now that Pelican Island has become a part of the Salton Sea Bird Refuge, the birds should regain their heritage there.

Certain other lands adjacent to the area that has been withdrawn from public entry for the creation of the Salton Sea Bird Refuge are the property of the Southern Pacific Company. Much of this land by reason of poor soil, salt marsh, rocks, and aridity, is of no possible commercial use. Hence, negotiations are pending whereby it is to be hoped that certain Southern Pacific lands will be exchanged for other Government tracts for the further enlargement of the Salton Sea Bird Refuge, but whether the area of the present refuge is to be enlarged or not is of minor importance. The area of Government lands that have been set aside along the south shore of the Salton Sea, and including the adjacent islands, is sufficient to protect most of the bird life of the Salton Sea and Imperial Valley regions from the indiscriminate slaughter that has gone on there in recent years. The most important breeding grounds are saved, and the waterfowl hunters will discover where most of the birds have gone when the annual bombardment begins next October.

Insect History

If a human enemy invaded the United States each year and destroyed about one per cent of their total wealth, every school child in the country would be taught the history, character and method of this enemy. Insect enemies, however, do this very thing without even being given more than a passing thought by the mass of people, and except where the damage is spectacular, only experts or those directly affected bother to look into the story behind the pests and the efforts that are made for their control. One of the experts who knows the story is E. O. Essig, professor of Entomology at the University of California, and in his book, *A History of Entomology,* he traces the development of entomology in the United States in its effort to meet the serious conditions brought about by native and introduced insects. He superimposes on the historical background a survey of the principal institutions in California featuring entomology, of the methods of biological control of insect pests, of insect legislation and of the leading insecticides. Perhaps the most important feature of the book is the chapter devoted to brief biographies of leading entomologists in this country. The volume deals largely with California, but makes an excellent reference work for all interested in the subject. It is priced at $10 by the Macmillan Company.

Bulb BUYING Sense

Reg. U.S. Pat. Off.

You ask: "Why order my bulbs now when I can do it just as well next October when ready for planting?" In the first place, ordering them now means no money outlay. You pay when billed in October. In the second place, there is something in, first come, first served.

The first comers are just logically the ones to get the pick of the new and rarer varieties. It makes no difference to us whether you order now or in October. We will have bulbs for you in either case. Suggesting buying now, might therefore come under the head of "a little friendly advice". So send for the bulb catalog. Get your order in early.

Wayside Gardens

MENTOR, OHIO

WATER LILIES

. . . Will repay you in enjoyment way out of proportion to the effort and money expended. Build a pool this year. Use our catalog as a guide. 40 valuable pages of water lily lore, drawings, plans, directions. . . This catalog, profusely illustrated in color, will fascinate you for hours. It may be the reason for your discovering the greatest hobby of your life. You can start with a simple water garden and enlarge it from year to year. Your free copy is ready to be mailed.

Complete Pool Collection $5

You can start a small water garden this year with this postpaid collection: 2 water lilies—Conqueror, a giant crimson, and Marliac White—and 10 plants including Egyptian Papyrus, Giant Arrowhead, Calla Lily, Fish and Border Plants. Postpaid. Order now!

Johnson Water Gardens

N-61 HYNES, CALIFORNIA

Trim Your Lawn *this easy way*

$2.75
POST PAID
Now the hardest work of cutting the grass—is easiest; with this new, long-handled trimmer.
Without stooping; you just walk along and neatly trim the places not reached by the mower—sidewalks, flower beds, walls, etc. Your lawn is always neat, clean. Shears of steel, self-sharpening; long 4 ft. handles of finished hardwood. Shipped postpaid in U. S. $2.75 (outside U. S. $3.00). Order now—money back guarantee.
Descriptive circular on request.
KLEIN MFG. CO.
Box B
Burlington, Iowa

Right now

is the time to use

Wilson's O. K. Plant Spray

frequently and thoroughly to protect your flowers, plants, shrubs and evergreens against the ravages of destructive insect pests. It is highly effective, yet will not injure the most tender young plants.

Trade Mark Registered

Wilson's O.K. Plant Spray is sold by leading stores everywhere and the genuine may be identified by the famous Trade Mark. Write us, if your dealer cannot supply your requirements.

Wilson's Awinc (Pyrethrum Spray) Non-poisonous, highly concentrated PYRETHRUM spray. Easily controls more resistant type of insect such as Japanese Beetle, Red Spider, Rose Chafer, Cabbage Worm, White Fly, etc. *Complete,* requiring only a dilution with water.

Then there is Wilson's FUNG-O . . . . . an efficient fungicide and remedy for Mildew, Black Spot and many other fungus diseases of ornamental and greenhouse plants. Particularly recommended for the Nectria Canker on Boxwood. 1 Gallon $4.00—5 Gallons $15.00—10 Gallons $30.00.

Andrew Wilson INC.

Dept. V6

SPRINGFIELD, NEW JERSEY

With next year dedicated to the celebration of the 200th anniversary of the birth of George Washington, you are undoubtedly planning to make pilgrimage to the nation's capital. How would you like to be personally conducted around the city, down through the Shenandoah Valley, over the trails of Shenandoah National Park, to Mount Vernon, Washington's home, and Wakefield, his birthplace, by a historian, who will reconstruct for you the brimming days along the Potomac, and by a naturalist, eager to interpret the scenic and Nature wonders that surround the Federal City? Nature Magazine is planning such trips as a service to its readers. If they sound good to you, whether you now plan to come to Washington or not, the Travel Editor will appreciate your reaction. Of course, no obligation attaches. We merely want your ideas to help plan.

ALLEGANY SCHOOL OF NATURAL HISTORY

The School in the Forest

Quaker Bridge, N. Y.

Fifth Season—July 8 to August 27, 1931

For field studies in Zoology, Botany, Physiography and Geology, Natural History of Birds, and Nature Study, under most favorable conditions as to natural surroundings, laboratories, living conditions, climate, and professional guidance.

Sponsored by the *Buffalo Society of Natural Sciences*, the *New York State Museum*, and the *University of Buffalo* (with college credit).

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Did you miss the interesting announcement on the bottom of page 409? Your advice is needed.

Arkansas Birds Listed

A very complete list of the birds of Arkansas has been compiled by Dr. W. J. Baerg, and issued as Bulletin No. 258 of the Agricultural Experiment Station of the University of Arkansas. Dr. Baerg describes 314 species and sub-species, but believes that there are still other species to be reported, as the lists from neighboring states are larger than the Arkansas list. Prefacing the terse notes on the varieties has been included directions for a study of birds and brief information on their habits and importance. This bulletin represents eighteen years of observation and will close one more of the gaps in ornithological data.

Astonishing Ant

One may safely say that the most publicized of insects is the ant. In fact, it has gotten so much publicity that there seems to be a tendency to "debunk" the industrious worker and belittle his genius. However, we have before us another volume of ant publicity bearing the title *The Astonishing Ant* and written by Julie Closson Kenly, who seems to have a knack of telling Nature stories in fascinating fashion. This particular book is designed to be of special interest to children but is so written that it cannot be otherwise than interesting to their parents as well. Being rather prejudiced for the ant ourselves we like this volume immensely. D. Appleton and Company of New York have published it and sell it for $2.50.

Trees and Birds

If Martin L. Davey had not been the son of John Davey, father of tree surgery, and destined to carry on his work, he might have attained equal success in a number of fields. He has been mayor, United States Congressman and candidate for governor, but most people know of him as one of the finest voices the radio has produced to be heard over a national radio hookup each Sunday afternoon. On March 22, Mr. Davey, during the Davey Tree Surgery hour, talked on trees and birds, and pointed out their economic and aesthetic place in the world; he also urged their care and protection, and lauded T. Gilbert Pearson and S. Prentiss Baldwin for their labors in behalf of birds. Reprints of this talk are available from the Davey Tree Expert Company of Kent, Ohio.

Late Director Honored

The creation of a Mather Memorial Parkway through Rainier National Forest by the Forest Service is one of the first dedications in honor of the late Stephen T. Mather, first director of the National Park Service. This parkway is a strip extending for one-half mile on either side of the Naches Park Highway, which runs for nearly fifty miles through the forest, and furnishes a new entrance to the Puget Sound region from the Yakima Valley and the East. No economic uses will be permitted in the area, which is highly scenic, and it will be developed in accord with the conservation ideas of the park leader it commemorates.

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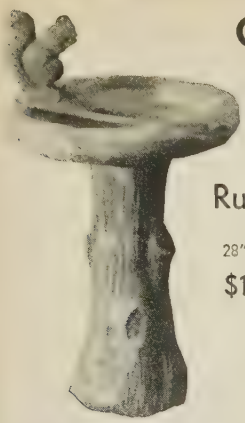

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Himalayan Research

Dr. Walter Koelz, formerly of the University of Michigan, and author of articles in Nature Magazine, reports on unusual botanical and zoological research at the Himalayan Research Institute of the Roerich Museum, which is located in the Kulu Valley of the western Himalayas. Dr. Koelz, who is actively in charge of the Institute, has brought the number of botanical collections to 1560, representing more than 10,000 species of Himalayan flora, some of which have been sent to America. The Institute offers to exchange collections for bio-chemical instruments or donations to carry on the important work it has begun.

Virginia Bird List

The Raven, bulletin of the Virginia Society of Ornithology, has published as a supplement to its February, 1931, issue a consolidated list of the birds of nine local regions in the Dominion state. This list, while not complete, covers most of the state, and is made up from separate lists compiled by a number of bird-students over a period of years. Copies of the list are available at twenty-five cents from Dr. J. J. Murray of Lynchburg, the editor.

The Federal City

From now until 1932,—the year of the Washington Bi-centennial—more attention than usual will be focused on the City of Washington. Appropriate, therefore, is the appearance of *Washington, City of Mighty Events*, by David Rankin Barbee. It is an illustrated popular description of the important places in the Federal City identified with the history of the city and the nation. It is published by Garrett and Massie of Richmond, Virginia, and sells for two dollars.

Starling Menace

It is well known that starlings are destructive pests, quarreling with other birds and robbing their nests, but only exceptionally is as much evidence against the species given by one observer as is supplied by Mrs. Frank H. Baldwin of East Jaffrey, New Hampshire. She had noticed for several years the growing scarcity of common birds in her neighborhood and concluded, after investigation, that starlings were mainly responsible. One pair of robins were forced to nest three times in one season, and each time lost their young to these birds. A bluebird and her mate had to stand by and watch while a starling swept out of a tree and pulled their nest to pieces. The same fate happened to chipping sparrows, a warbling vireo and the least flycatcher. A whole nest of little sparrows were eaten, after they were hatched. Mrs. Baldwin writes: "I have noticed on many a spring day starlings flying overhead with something in their beaks. I always supposed they must be carrying grubs, but I now feel sure they were other birds' eggs. I hope other lovers of our native birds will become interested, and some successful plan worked out to thin the starlings to the safety number."

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Many of the articles about pets in Nature magazine have stimulated inquiries as to where to purchase certain pets. Once we sold out most of the marmoset monkeys in the country, and another time we started a run on guppies. If you need advice on a reputable kennel from which to buy a dog; on the source of exotic pets or other pet information just write to the Pet Department of Nature Magazine.

ENJOYING REPTILE PETS

(Continued from page 377)

esting to watch but often growing vicious as they grow older, and snapping at the hand that feeds them.

Some reptiles lay eggs, while others are viviparous. Turtles' eggs are deposited in the sand and if carefully removed with some of the sand to a can, and placed on the window ledge where they will receive both sunshine and rain, they will reward your care by hatching into tiny soft turtles that furnish many enjoyable hours of study.

In caring for any reptile, remember that they are cold blooded and hibernate in the winter, so try as best you can to duplicate the habitat in which you found them. They are carnivorous, feeding on insects, fish, amphibians, rodents and like creatures, and where it is possible to produce their natural food so much the better, otherwise they may be fed on pieces of beef, fish, clams, earthworms, or frogs.

Having captured any of these interesting pets you have not only the pleasure of caring for them awhile and watching them, but the satisfaction of knowing that if at any time you tire of them they may be returned to the place in which you found them. In the meantime you will have had an unusual experience not excelled by the owner of the most highly pedigreed pup.

Dog Foundation Created

A foundation to advance the welfare of dogs and study their problems has recently been created by the Chappel brothers of Rockford, Illinois, and will be the medium through which these well-known dog-lovers will carry on their future canine philanthropies. The foundation will seek to encourage dog ownership, disseminate information on the care of dogs, and will carry on research work in genetics and nutrition. One of the first problems, and a most important one, is that of keeping dogs in city apartments. L. J. Brosemer, formerly of the Department of Agriculture, is in charge of the Foundation, which will be known as the Chappel Kennel Foundation.

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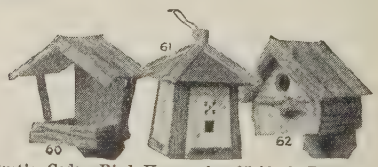

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Painted Chipmunks

The above photograph was snapped by C. M. Troxel of Sacramento, California, while he was camping in the Modoc National Forest. It reveals an even half dozen painted chipmunks drinking at a spring in the heart of this semi-desert country. Each creature seemed intent on getting his drink and escaping—food in the form of barley and bread scraps, placed nearby, attracted no more than passing notice. It is rare to see chipmunks patronizing a water hole—in fact, few visitors to the National Parks and Forests ever see them drink at all, which makes this clear picture remarkable.

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The American Tree Association stands for a constructive policy of forest protection and extension, to increase appreciation of forests as natural resources essential to the sound economic future of the country.

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NEW ENGLAND WOMEN PLANT TREE AT AMERICAN U CAMPUS

LEADING all states thus far reporting to the American Tree Association, the Michigan Federation of Women's Clubs has registered the planting of 40,000 trees in a memorial acreage for George Washington. The registration made by Mrs. B. F. Williston of Detroit, chairman of conservation, is in connection with the Detroit *News* plan for reforesting idle acres in that state. Mrs. C. L. Thompson of Muskegon is president.

The first of the hundreds of national organizations meeting in Washington between now and the Washington bicentennial year in 1932 has planted a tree there to mark the bicentennial of the birth, in 1932, of the first president. The organization is the National Society of New England Women which planted during its annual sessions. The registration filed with Charles Lathrop Pack, the president of the American Tree Association, was made by Mrs. George Stowe of the New York City Colony of the Society. Plans for the planting were worked out with Dr. Lucius C. Clark, chancellor of American University. He provided a very fine site for the American Elm near the Battelle Memorial Library and just off the drive leading to the gymnasium. Dr. Clark welcomed the women. Mrs. Frank Robson of Elizabeth, N. J. led in singing "America" and there was a prayer by Mrs. Edwin P. Day, the Chaplain General. Mrs. Clara Coe Bryne, the President General of Hartford, Conn., headed the delegation to the tree planting.

Following Dr. Clark's welcome the college band played patriotic airs; then Mrs. Bryne placed the first shovel of earth about the roots while B. Brook Bright, the president of '32, the bicentennial class, poured in the water. Mrs. Bryne then replied to Dr. Clark's welcome and called upon Mrs. Gilbert L. Lewis, the new president general, to throw in some earth. Then various officers and delegates to the sessions helped in the planting. Among them were Mrs. Finley J. Shepard, Mrs. J. W. Canaday, Jr., Mrs. M. P. Jacobs, Mrs. Jerome H. Farris, Mrs. E. C. Robinson. Dean Woods, members of the class of '32, Olive Rodgers, American University '32, then presented to Mrs. Bryne the certificate of membership in the American Tree Association. "This tree planting is twofold," said Mrs. Bryne. "The National Society of New England women is proud to leave a living growing tree on the campus of American University as a reminder of the stay in Washington. We are more than proud that Dr. Clark will let us mark the tree as our part in the bicentennial program for the Father of Our Country."

A "Grandchild" of the famous Cambridge Elm, under which George Washington took command of the American Army in 1775, has been sent to Sulgrave Manor House in England.

The "Grandchild", which is nearly eight feet tall, was presented to the Sulgrave Manor Board through Viscount Lee of Fareham, the chairman of the board for planting at the ancestral home of the Washington family at Sulgrave, near Banbury, Oxon, England by Mrs. James H. Dorsey of the Baltimore Chapter of the Maryland Daughters of the American Revolution. Mrs. Dorsey is State Chairman of Conservation of Maryland, and Vice Chairman of the National Committee on Conservation in charge of the Eastern Division of the Daughters of the American Revolution. With the tree goes a bronze marker which reads as follows:

WASHINGTON
FIRST TOOK COMMAND OF THE AMERICAN ARMY UNDER THE GRANDPARENT OF THIS ELM AT CAMBRIDGE, MASS. JULY 3, 1775.

The American Tree Association sent with it a certificate of registration in the American Tree Association, made out to the Sulgrave Manor Board. This has been sent to Viscount Lee.

At the planting, the regent of the Walter Hines Page Chapter of the Daughters of the American Revolution in London, will represent Mrs. Dorsey and the Maryland D. A. R. A box of soil from Annapolis, where Washington resigned his commission as commander-in-chief of the army, will be used. Thus the beginning and the end of his generalship will be recorded at the ancestral home.

This "Grandchild" of the Cambridge Elm has a very interesting history. It grew from seeds scooped up in a box, by a relative of Mrs. Dorsey some 25 years ago. Two "children" of the tree are at Mount Vernon, and another is at Annapolis. A cablegram, received by Mrs. Dorsey from Viscount Lee, said that his board accepted the gift with great delight. Another "grandchild" of the Cambridge Elm has been planted at the headquarters of the American Tree Association in Washington, and will be marked exactly like the tree being sent to Sulgrave Manor.

The Community Club of Statesville, N. C., under the direction of Mrs. Thomas E. Anderson has been instrumental in the planting of 20,000 trees to honor George Washington, according to a report sent in by Mrs. Anderson. This tree planting has been registered on the national honor roll and a certificate of membership sent to the club.

The Woman's Club of Topeka has registered a tree planted in honor of George Washington. The registration was made by Mrs. W. F. Thompson, President of the Woman's Club. Among those having part in the program were Mrs. Rowe Colvin, sister of Vice-President Curtis, Mrs. A. R. Springer, Mrs. J. R. Sargent, Mrs. John Nelson, and Mrs. W. C. Hindman, member of the National Scout Board. A large audience witnessed the tree planting and impressive ceremonies were held.

The American Tree Association is registering thousands of tree planters in the plan to mark the bicentennial of the birth of George Washington by planting trees. The tree planting plan has been taken up by patriotic organizations, the Masonic fraternity of which Washington was a member, civic associations, the woman's clubs, Scouts, Camp Fire Girls, and thousands of schools. Tree planting time will be here soon again. Send for tree planting suggestions and put your name on the honor roll of this tree planting army.

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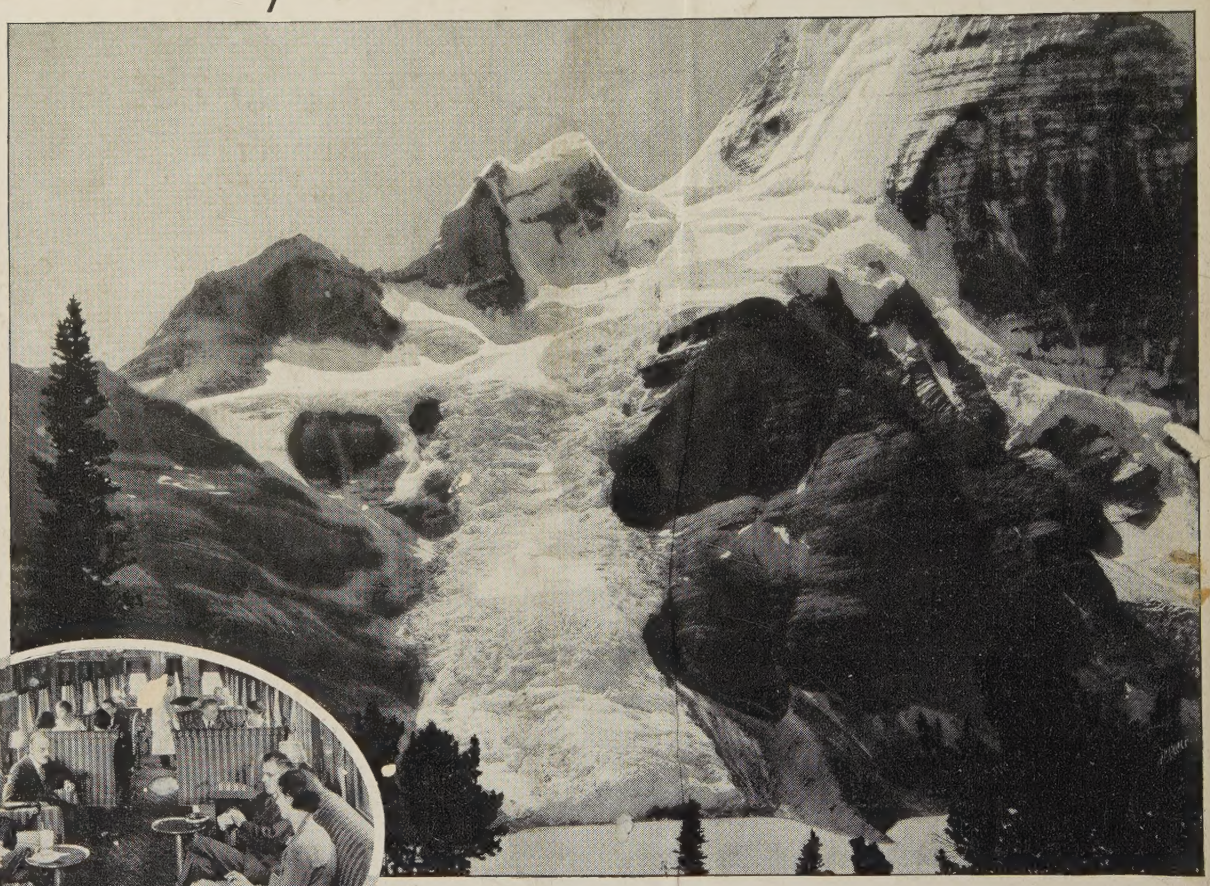

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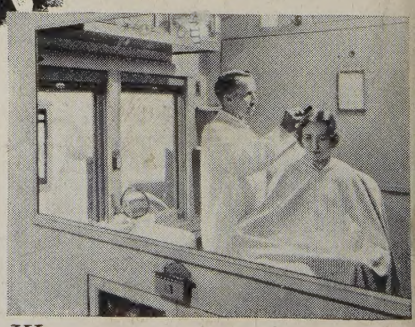

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